SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Registration of New Companies.

The following joint-stoccompanies have been duly registered —

The San Paulo Central Sugar Factory of Brazil (Limited).—Capital 80,250*l.*, in shares of 10*l.* To establish and carry on a sugar manufacturer's and refiner's business. The subscribers (who take one share each) are—T. Dickson, Richmond House; E. Easton, 11, Delahay-street; J. Goodson, 32, Kensington Gardens-square; W. H. Barber, Champion Hill; D. A. Onslow, 14, Waverley-place; F. J. Heseldine, 1, East India Avenue; C. H. Linklater, 6, Warnford-court.

The Ore Refining Company (Limited).—Capital 12,000*l.*, in shares of 10*l.* To carry on a business in connection with patents to be acquired of C P. N. Weatherley, of Nyack, New York. The subscribers (who take one share each) are—C. G. Pfonder, 34, St. Andrew's-hill; E. B. A. Schieman, 20, Mornington-road; F. B. Houghton, 26, Oakden-street; D. Green, 1, Finsbury-circus; T. A. Brown, 11, Queen Victoria-street; J. Stevenson, 11, Queen Victoria-street; J. Dunham Massy, Wood Vale.

Kensington Agricultural Hall (Limited).—Capital 200,000*l.*, in shares of 5*l.* To erect and maintain in Hammersmith a building for exhibiting cattle, poultry, flowers, &c. The subscribers (who take one share each) are—R. Coe, Imperial Buildings; E. S. M. Hutchinson, Worthing; A. Catt, Teddington; T. J. Riordan, 37, Manaton-road; W. Kirkman, 47, Old Broad-street; W. C. Vokes, 3, Robert-street; T. Weedon, 65, Huntley-street.

The Patent Electric Gas Igniting Company (Limited).—Capital 100,000*l.*, in shares of 5*l.* To acquire and carry on the business of the Electric Gas Lighting Company (Limited) and of the London and Provincial Electric Gas Lighting Company (Limited). The subscribers (who take one share each) are—R. W. Rawson, 68, Cornwall Gardens; F. Bennock, 5, Tavistock-square; S. F. Porter, Putney; J. Leigh, Alderley Edge; W. Milne, Alderley Edge; J. H. Stretton, 2, Dean-street; J. A. Hilliard, Grove Park.

The Emily Copper Mines (Limited).—Capital 35,000*l.*, in shares of 5*l.* and 1*l.* To adopt and carry into effect a contract made between M. E. Jobling, of the one part, and A. H. Purcell, as trustee for the acquisition of a mining property, situate in Devonshire (this contract has not been registered). To purchase or otherwise acquire, work, and develope lands, mines, minerals, hereditaments, property, licenses, rights, easements, and appurtenances in said county or elsewhere. The subscribers are—H. Maudsley, Westminster Palace Hotel, civil engineer, 200; R. Makepeace, 85, Gresham-street, accountant, 20; H. S. Thompson, 1, Gresham Buildings, gentleman, 1; J. Brown, 22, Charing Cross, submarine engineer, 1; J. E. Stokes, 22, Charing Cross, secretary, 1; E. T. Parnell, 22, Charing Cross, mining engineer, 10; S. Chapman, 26, Basinghall-street, solicitor, 1.

Gibbs and Flew (Limited).— Capital 250,000*l.*, in shares of 100*l.* To acquire, carry on, and develope an established business at West Kensington of builders, contractors, &c. The subscribers (who take one share each) are—J. H. Gibbs, West Kensington; J. P. Flew, Fulham; W. S. J. Arabin, 36, Grosvenor-square; R. S. Fourtin, 80, Coleman-street; A. F. Leach, 34, Elm Park Gardens; J. Butler, 11, Redcliffe Gardens; E. C. Haynes, 9, New-square.

The British Joint-Stock Insurance Association (Limited).—Capital 1,00,000*l.*, in shares of 10*l.* To carry on at home and abroad every description of insurance other than that of life. The subscribers (who take one share each) are—T. M. Roxby, Wimbledon; J. Alberga, South Kensington; E. Clare, 25, Somerville-road; A. W. Prince, 13, Garlick Hill; A. T. Evens, 18, Walbrook; R. P. Birkett, 23, Queen Victoria-street; E. Rowley, Peckham Rye.

The Drawing Room Publishing Company (Limited).—Capital 6000*l.*, in shares of 5*l.* The business of publishers, printers, draughtsmen, &c. The subscribers (who take one share each) are—C. W. P. Overend, King's Bench Walk; H. Schallchu, Brixton; H. E. Hounsell, Bridport; B. A. Horusell, Bridport; A. Cox, 2, Levington-street; H. Bear, 9, Thornhill-road; W. M'Gingle, 5, St. John's-terrace.

The Hoeschotype Company (Limited).—Capital 25,000*l.*, in shares of 5*l.* Business of printers, lithographers, engravers, designers, &c., in connection with certain patents. The subscribers (who take one share each) are—N. Shore, 1, James-street; J. S. Fairfax, 41, Parliament-street; J. Edwards, Hassell-road; L. Godfrey, 2, Vernon Place; A. J. King, Kilburn; J. H. Sherwin, Wandsworth; J. Pomeroy, 7, Howard-street.

Baillie Hamilton and Company (Limited).—Capital 25,000*l.*, in shares of 10*l.* and 1*l.* To acquire and carry on the business of the St. Mary's Organ Company (Limited) and patents connected there with. The subscribers (who take one share each) are—F. Young, 5, Queensbury-place: J. B. Hamilton, 43, Cadogan-terrace; H. H. S. Cunynghame, 1, Fig Tree-court; C. H. Coke, 48, Shaftesbury-road; W. S. Farmer, Harrow-on-the-Hill; H. E. Boulton, Totteridge; T. M. Macdonald, Manchester.

Plant and Company (Limited).—Capital 15,000*l.*, in shares of 1*l.* To acquire by purchase or otherwise 74 acres of freehold land and minerals now belonging to the Rev. J. P. Fallows, situate near to Cheadle, Staffordshire, and any other mines and properties whatsoever, for the purpose of developing and working same, and to win, raise, deal in, and sell the coal, ironstone, clay, and all other minerals, materials, and products of every description. The subscribers (who take one share each) are—J. E. Patmore, New Southgate, clerk; W. Brain, Upper Tooting, secretary; K. H. Lane, 107, Fleet-street, accountant; M. G. E. Cuddoy, Acton, clerk; R. H. Tilley, Stepney, clerk; J. Baker, 74, Hamond-street, wine merchant; R. G. Brook, 15, St. Mary's-square, general merchant. The first directors are—R. Plant, J. T. Dawes, W S. Chenhall, J. H. Keates, and T. H. Millington. Mr. R. Plant to be managing director for five years.

The Herne Bay Gas and Coke Company is now incorporated under the Limited Liability Companies Acts.

L. Sterne and Company (Limited).—Capital 100,000*l.*, in shares of 10*l.* To acquire and carry on an engineering business, situate at the Crown Ironworks, Glasgow. The subscribers (who take one share each) are—L. Sterne, 10, Victoria Chambers; M. Fenton, 22A, Park Side; J. S. Beale, 28, Great George-street; J. Guthrie, Glasgow; A. G. Beale, 13, Gloster-crescent; C. M. Payne, 28, Creat George-street; F. J. Griesback, 34, Carlton-road.

B. Sulman and Company (Limited).—Capital 12,000*l.*, in shares of 5*l.* To acquire a business of diesinker, engraver, stationer, &c., established at the Metropolitan Works, 63 and 64, Milton-street. The subscribers are—W. Howard, 17, High-street; J. J. Page, Hampstead; H. E. Nicholls, 18, Heygate-street; A. W. Matthews, 40, College-place; A. Blaker, 7, Peynton-road; G. W. Page, 35, Upper Grange-road; J. Crowhurst, 12, Lambs' Buildings.

Saunders and Company (Limited).—Capital 100,000*l.*, in shares of 5*l.* To act as bankers, bill brokers, discounters, money lenders, financial agents, and merchants. The subscribers are—F. Bocquet, 32, Regent-street, 100; J. Brown, 29, Trevor-square, 100; T. R. Hill, 4, Haymarket, 100; G. H. Runecker, 13, Gray's Inn-square, 100; G. O. Saunders, Acton, 100; C. F. Emmett, 11, Jermyn-street, 50; W. S. Bocquet, 14, Bedford-place, 50.

Robert Watson and Sons (Limited).—Capital 100,000*l.*, in shares of 10*l.* To purchase and work the Stone Bridge and Rhyddings Cotton Mill at Oswaldtwistle, Lancashire. The subscribers (who take one share each) are—R. Watson, Oswaldtwistle; J. K. Glazebrook, Manchester; J. W. Watson, Manchester; W. K. Watson, Oswaldtwistle; J. Watson, Oswaldtwistle; C. R. Trevor, Manchester; R. F. Watson, Oswaldtwistle.

The Albert Exhibition Palace (Limited).—Capital 60,000*l.*, in shares of 5*l.* To erect and maintain the building of the Dublin Exhibition near to Battersea Park. The subscribers (who take one share each) are—The Duke of Teck, Kensington Palace; Major-General General Fielden, Blackburn; W. T. Ma riott, 56, Ennismore Gardens; C. H. Meldon, M.P., 107, Seymour-street; J. O. Lever, M.P., 97, St. George's-square; J. E. Gorst, 79, St. George's-square; Lord H. G. Lennox, M.P., Carlton Club.

The Metallic Tubular Bridge Smoke Prevention Company (Limited).—Capital 10,000*l.*, in shares of 1*l.* To manufacture, sell, and deal in apparatus for the prevention of smoke. The subscribers (who take one share each) are—J. H. Keates, Sheffield; J. W. Millington, Sheffield; B. Gerald, 36, Malvern-road; R. V. Miles, Tottenham; G. Snell, 4, Austinfriars; W. Cartwright, Turnham Green; E. Lownds, Stafford.

The Powder River Cattle Company (Limited). — Capital 300,000*l.*, in shares of 10*l.* To acquire an extensive property already stocked in the United States, and carry on a business in connection therewith. The subscribers (who take one share each) are—The Duke of Manchester, Kimbolton; A. Sartorious, Abbotsford; C. P. Kemp, 8, Walbrook; E. J. Gardiner, Lee; M. Frewen, Galway; W. Mackenzie, Dundee; C. W. Kemp, Walbrook.

R. J. Marsh and Company (Limited).—Capital 20,000*l.*, in in shares of 10*l.* To acquire the goowill and work a stone merchant's business at Corsham, Box, Farleigh, or elsewhere in Wiltshire. The subscribers (who take 50 shares each) are—S. Giles, Bath; W. Church, Bristol; A. J. Beaven, Bristol; R. J. Marsh, Box; W. H. Cowlin, 3, Brunswick-square; A. Krauss, Bristol; J. Bladwell, Bath.

King's Bread and Biscuit Company (Limited).—Capital 10,000*l.*, in shares of 5*l.* To acquire and carry on a business established at 56, Blackman-street, Borough, S.E. The subscribers (who take one share each) are—E Kent, 56, Blackman-street; H. Devitt, 16, Mark-lane; E. K. Hett, 16, Mark-lane; J. Walton, Lower Edmonton; S. Gardner, 13, Copthall-court; T. Devitt, 29, Fenchurch-street; W. Collins, 18, Billiter-street.

The Selby Brewing Company (Limited).—Capital 100,000*l.*, in shares of 5*l.* To acquire and carry on an established business. The subscribers are—G. Oldridge, Selby, 3000; T. Gibson, Selby, 1500; J. Burton, York, 200; W. Hawdon, Selby, 1500; D. T. Bradley, Selby, 100; G. A. Buckingham, Selby, 5; G. S. Hawdon, Selby, 5.

The Kent Conservative Company (Limited). Capital 7000*l.*, in shares of 5*l.* To establish and maintain in Maidstone a club-house, &c. The subscribers are—J. Hollingworth, Maidstone, 50; T. Hollingworth, Maidstone, 50; W. Lawrence, Maidstone, 10; S. Monkton, Maidstone, 10; R. Doe, Maidstone, 5; G. B. Bunter, Maidstone, 10; W. Page. Maidstone, 180.

THE GOLD FIELDS OF NOVA SCOTIA.

An account of the gold fields of Nova Scotia, a district of geological interest though it has as yet produced but little gold, was given in an ably written paper by Mr. Edwin Gilpin, jun., M.A., F.G.S., the Government Inspector of Mines for the province, recently read before the North of England Institute of Mining and Mechanical Engineers, in which he says that the age of the rock masses composing this gold field is still conjectural, but the structure of the individual districts is well proved. The gold fields occupy a district extending along the Atlantic coast from Cape Canso to Yarmouth, and varying in width from 10 miles to 40 miles. The total area of the auriferous strata and the rocks most intimately connected with them is estimated at from 6500 to 7000 square miles, of which about one-half is occupied by what are known as "granite" rocks. The shore presents a low rugged front, diversified by numerous harbours running for long distances inland, and studded with islands. The land rises gradually to a height of 560 ft. and is cut up by numerous lakes and swamps. The soil is generally poor and boulder laden, and there are large areas supporting no vegetation beyond a few shrubs. In the Lunenburg district, and many of the inland valleys there is good farming land, but generally speaking the district is valued only for its timber and gold mines. The existence of gold in Nova Scotia was conjectured perhaps when Queen Elizabeth in 1578, in a patent granted to Sir Humphrey Gilbert, made a reservation of one-fifth of all the gold and silver he might discover. Later, in a patent issued by Charles I. to Sir William Alexander, in 1621, one-tenth of the precious metal was reserved. The names of Bras D'or, Jeu D'or (Jeddore), &c., would seem to show that gold was not unknown among the early French settlers, and it appears on good authority that 150 years ago they washed from the sands of the River Avon, near Windsor, small quantities of gold.

The discovery of gold in Nova Scotia was predicted by Sir Charles Lyell in his remarks on the Geology of North America, published in 1842. However, public attention was not directed to the matter until the discovery of gold on the Pacific Coast caused a search to be made which was continued by returned Californian miners until 1858, when a man drinking at a brook near Tangier picked up a nugget of gold. From this chance discovery and the excitement which followed may be dated the beginning of gold mining proper in the province. The Nova Scotia granite has all the characters of a plutonic rock in its want of stratification, its frequent prophyritic appearance, its passage into graphic granite, &c., and closely resembles in lithological characters the intrusive granites of the Eastern Townships of Quebec and of New England, some of which belong to the Montalban Series of Hunt, while others are later than the Upper Silurian; and it differs materially from the typical Laurentian of Canada. In the latter the gneisses are usually hornblendic, laminated, and interstratified with diorites, pyroxene rock, limestone, serpentine, and so on. These granites are evidently older than the Carboniferous, for at Horton their débris is found in the Lower Carboniferous. At Nictaux they penetrate rocks of Oriskany age. They are therefore much more recent than the auriferous strata, to which a greater age must be assigned. Around and between these granite masses the gold bearing strata are spread, with a general strike parallel to the line of the shore, and are now presented in a series of undulations, such as would be expected from a pressure acting against the trend of the coast.

The gold bearing strata may be divided into two great sections. The upper is composed principally of black earthy pyritous slates with few beds of quartzites, and not many quartz veins. These veins are auriferous when exposed in the anticlinals similar to those in the lower section to be described further on. An instance of this auriferous character of the veins is met at Lunenburg, but it is not known at what horizon they occur. Its thickness has been estimated by Professor Hynd to be about 3000 ft. The lower section is composed of alternating beds of quartzites and compact sandstone, sometimes felspathic, and argillites, and is estimated to be 9000 ft. thick. The minerals usually associated with the gold are sulphides and arsenides of iron, galena, blende, copper pyrites, oxide of iron, copper glance, molybdenite, native copper, sulphur, chlorite, felspar, garnet, mica, calcite, felsite, &c., not, however, in quantities of economic importance. The presence of these minerals, especially of the sulphides and arsenides of iron, appears to be essential to the value of the lodes. It is true that numbers of lodes have been worked causing but trifling quantities of pyrites, &c.; but if not present in the vein they are found in the enclosing walls, which, in this case are sometimes rich enough to warrant crushing. The gold occurs chiefly as free or coarse gold in grains visible to the naked eye, and in strings or filaments between the planes of the quartz. A considerable quantity is enclosed in the nodules and nests of the associated minerals, as will be noticed further on. Crystals have occasionally been found not exceeding ¼ in. in diameter; one from Tangier was a rhombic dodecahedron with bevelled edges, and brilliant finely striated faces; others are octahedra, sometimes elongated and flattened, with dull and rounded faces.

The distribution of the gold in the veins is to a certain extent capricious; few lodes carry a uniform yield over a space exceeding 500 feet. There is in almost every vein one or more zones or pay streaks of quartz much richer than that surrounding it; these zones do not appear to be the effect of any law that has yet been applied to Nova Scotian mines; they lie at every angle, and appear to be of very varied length and width. At the Wellington Mine, in Sherbrooke, one of these streaks has been followed nearly 600 ft. from the surface without showing signs of exhaustion. The surrounding quartz varied from 2 to 6 dwts. to the ton, while the pay streak ran as high as 20 ozs. As yet alluvial gold has not been worked in the province to any noteworthy extent, the total yield being estimated at about 4000 ozs. In the earlier operations many companies were started with schemes too ambitious for their means, and broke down before they could get into working order. Others paid large dividends for a few years, but having no reserve funds abandoned the work when they encountered the trial of poor ore, which must be faced by every miner sooner or later. Other properties again have been continuously worked, and have made handsome returns. On the failure of many of the large companies their properties were sublet to tributers, some of whom have done well by systematic mining, and others have effected little beyond robbing the richer parts of the lodes within a few yards of the surface. During the past two years a number of the more promising properties have been purchased by American capitalists, and it is expected that their mining experience gathered in the Western States will lead to a much larger output than has been obtained for some years past.

Formerly it was customary to take out at one operation the lode and enough of the slate, &c., to allow working room of from 2 to 3 ft. This was found to lead to serious loss of gold both by theft and by mixture of the quartz with the rock, which had nearly all to be sorted at bank. Now, the slate, &c., on one side of the vein is first taken out, and the vein allowed to stand untouched until several hundred square feet of it are exposed; then it is removed at one operation, and sent directly to the surface; this method costs rather more, as the width of the ground removed is increased by the thickness of the lode, but the quartz is not so much exposed to the workmen, and very little of it is lost. The pumps used are of every variety, from Cornish patterns to steam ejectors. The explosive used is chiefly powder, but in some cases dynamite is used; both now supplied from local factories. The drilling is entirely two-handed, and the system of single-hand drills never succeeded in establishing itself here. Machine drills are but little used, and the narrow inclined workings which necessarily characterise our gold mines almost forbid their application except for driving levels, &c. They will, however, be found economical when attention is turned to working the broad belts of banded slate and quartzite which are met in many of the districts, and offer an abundant supply of low grade ores. The cost of extracting a ton of ore varies between wide limits; in the narrower veins it frequently costs as high as $15 per ton of 2000 lbs., while in veins 3 ft. wide and upwards it is raised for $1·50 a ton, and in slate bands from 3 to 10 ft. wide the cost has been known not to exceed 95 c., the wages of miners being $1·25, and of labourers 90 c. to $1 a day.

The quartzite from the mine is passed directly to the stamp mill. At the commencement of gold mining here attempts were made to roast the ores before they were stamped, but as the ordinary circular open kilns were used with wood for fuel, the heat was not more than sufficient to drive off part of the sulphur in combination with the iron, and to coat the free gold with arsenic from the almost omnipresent mispickel, and they were abandoned. In some mills the use of plates in the batteries is not adopted, but mercury is added at regular intervals to the ore undergoing pulverisation; the resulting amalgam accumulates around the circular dies on which the stamps fall, and is taken out at the weak end. The use of mercury traps and blankets is not as general as it might be. As the gold is generally coarse much of it is retained in the batteries, and the loss is in the fine gold not caught by the plates. Excluding the gold found in a state of minute subdivision in the sulphurets, the mills, as a rule, do not extract over 75 per cent. of the gold. The causes of this are the casing of the gold by grease from lamps, dynamite, &c., and the powdered silicates of alumina which form an unctuous slime, as well as the vibratory motion of the stamps inducing a crystalline condition of the gold unfavourable to amalgamation, in addition to the flouring of the gold by the stamping, so that it floats too rapidly over the plates to permit of its being caught by the mercury. No process has yet been found equal to the task of recovering the gold thus lost.

It has already been mentioned that considerable quantities of arsenical pyrites and sulphurets of iron, lead, and copper are found in the veins usually in close connection with the gold; the percentage present of these minerals varies very much. Some veins and the encasing rocks are heavily loaded with them up to a proportion as high as 60 per cent., while in other veins equally auriferous the quantity will not exceed 1 per cent.; the average amount may be estimated at not less than 5 per cent. They are presented as scattered crystals as films in the bands of the veins, and as irregular masses or pockets frequently connected by threads. As an almost universal rule, they contain gold. Beautiful specimens of gold are frequently secured by treating nodules of pyrites with acid, which presents the metal in curiously interlaced plates and films, when by a previous examination no gold could be detected. As yet the treatment of these pyrites has been of the most superficial character; they are passed through the mills together with the quartz, and allowed to run away with the tailings. The paper is amply illustrated with tables, a sketch map of the province, geological sections, and diagrams of machinery, so that whilst it must have been highly appreciated by the members of the Society, it is well calculated to promote the progress of gold mining industry in Nova Scotia.

Metalworkers' Practical Guide. — In last week's *Mining Journal* a full notice was given of the excellent illustrated handbook and guide for practical metalworkers, now in course of publication by Mr. A. Hartleben, of Vienna—Illüstrirtes Hand-und Hülfsbuch für den praktischen Metallarbeiter. Bearbeitet von H. Schuberth. A. Hartleben's Verlag in Wien—and the second series of five numbers has now been issued. The first five numbers, as already noted, related principally to the work of the founder, moulder, and electrotyper, whilst the present series is more directly interesting to the smith, tinplate worker, and machine constructor. Two-thirds of the book being now completed, it may safely be said that all branches of metal working are fairly represented, and that the excellent illustrations in the text and cleverly executed chromo

lithograms must enhance the descriptions of technical processes given, and make the work well worthy of a place in the library of every practical man.

Original Correspondence.

GOLD AND DIAMOND MINING IN SOUTH AFRICA.

SIR,—During the last 10 months I have almost stood alone in warning the public against the commercial crisis which I considered inevitable, in consequence of over-speculation during the company mania. My only object in writing was the public good, and if the public had acted on my advice the commercial crisis would have been avoided. I do not hesitate to say that some of your contemporaries have contributed largely towards bringing about this sad state of affairs. I must say the Diamond News has occasionally sounded a warning note, and for so doing they have been subjected to attacks almost as severe as myself. Mining throughout the fields is as dull as it possibly can be, and there is even a talk of winding-up that promising concern—Otto's Kopje. The banks, as I have informed you in previous letters are putting on the screw, but considering all the circumstances not more than can be expected.

The Diamond News, which is the principal local authority on the subject, has the following:—

It will be with special interest that the half-yearly statements of the banks will be received in financial circles here on the occasion of the next publication of these returns. There can, of course, be no better means of judging of the true financial state of any community than by the condition of the banks. We have already entered on the subject, but we have delayed fully discussing the matter until we have had a more full opportunity of learning what information the banks themselves will supply.

We have always been ready to admit that the operations of our local banks must of necessity be conducted in a careful and cautious manner; and we should be the first to condemn the policy of encouraging unhealthy speculation at the present critical time. But we cannot agree with the system of oppression which the banks have undoubtedly adopted of late. There can be no use in disguising the fact that more than one honest business man here has already been ruined through the cruel policy that has found so much favour with the managers and directors of monetary institutions connected with Kimberley. We have said before that, had this been the policy of those institutions for any length of time, we might have said with justice that it was hard, but we could not have stated that it was inconsistent. One of our colonial contemporaries accuses us of attempting an uncalled-for attack on the banks, and it makes a strong effort to refute our statements. But we can inform our contemporary that we have as yet commenced no such attack, and furthermore we certainly shall not attempt anything of such a nature until we have seen what the banks themselves have to say on the subject of the present crisis. It is perfectly true that we have remarked in a general way on a particular line of action adopted by the banks here, but we have not attempted a careful criticism of their plans of action. The statements of the local banks in Kimberley have for some time past been extremely satisfactory both to the shareholders and to the public generally, but we can hardly hope that we shall find those next made public will meet with equal favour. We do not for one moment mean to imply that they may not prove that the various institutions are in a most flourishing condition, but we fear that a careful consideration of the statements will show that business has been conducted in a way that has been far less profitable than it might have been to the shareholders, and at the same time extremely injurious to the interests of the public.

We wish it to be distinctly understood that we by no means think that it is advisable for the directors of banks to listen in every instance to the voice of the public. And we certainly think that 12 months ago when our banks stopped advances on scrip, they did good service to the community, although their action was somewhat sudden; and even though it may be true that they at first fell into the same error that we allude, still, when the time of danger had passed, we had a right to expect a slight relaxation on rules adopted at a time when the whole community was seized with a wild mania. If it be really the intention of the banks here to cause a panic, and such a panic as has never before been know on the diamond fields, it would be far better that this should be generally understood. We confess that we have as yet no definite proof of systematic action in such a direction, but we are certainly convinced that such will be the result of the present course of proceedings. That Kimberley has a time of fearful hardship to pass through is no longer a matter of doubt; we must accept this as a misfortune that has now become unavoidable, but it is still in our power to mitigate the evil in some degree. We confess that in some respects we may be premature in our remarks concerning our banks, but we can assure our readers that when the bank statements are published we shall give them our most careful consideration, and shall not hesitate to point out what we consider to be defective in them.

I have frequently pointed to the trapping system as being repugnant to the feelings of Englishmen, and often open to grave abuse; and in a series of articles explaining "How Revenge can be Gratified in Kimberley," the Diamond News has lately referred to a most abominable case where an innocent man was condemned through the false testimony of villains. I subjoin the extract so far as relates to the summing up. The case having been heard, the President said "We find you guilty, and you are sentenced to five years' imprisonment with hard labour and a fine of 500*l*." I saw Steeve turn pale, and then there was a sudden flush to his countenance. Raising his hands above his head he said "God knows I am innocent," and fell on the floor, with an ensanguined stream pouring from his mouth. How can I continue? Poor Steeve had broken a blood-vessel, and within three weeks I followed my dear noble-hearted friend to his convict's grave.

About three months afterwards I had occasion to visit Jagersfontein, and while I was in the mine an accident occurred. A slip of ground took place, and three men were buried beneath it. All the other diggers, white and black, rushed like madmen to extricate them, and at last succeeded, but two were dead, and the third, with a dreadfully disfigured countenance, and his left ribs broken, was evidently in a dying state. I happened to be the only medical man about there at the moment, and, of course, I did the utmost I could for him; but I saw he was going fast, and that it would have been actually cruel to increase his pain by endeavouring to reset them. I gave him a stimulant and he partly revived and said, "Doctor, you do not remember me, but I know you well." His features were utterly unrecognisable, but his voice I seemed to remember. He saw my confusion and added, "Sir, I was Mr. Steeve's servant, Jacob." Yes, I remembered him then, and also that he had not been seen from the time of his master's arrest. "I feel I am dying, Sir," said he, "and cannot go without making a confession. You were always kind to me, and I am very glad that you are here now. The detectives were not so much to blame with Master Steeve. I was the really guilty man, but I did not know anything of the plot of Jan and Tom to trap my master. I had bought diamonds there, not from them but from other boys. Mr. Steeve was always liberal with his clothes which he gave to me. You know I looked something like him, especially after sundown. I used to carry on the trade, but poor Master Steeve was as innocent as a child unborn. Well, Sir, I will tell you how it happened that night. The two traps, Jan and Tom, had a bitter spite against the master for the punishment they received in the Free State. I knew nothing of this, but they had sworn to have revenge on him. It was only about a week ago that I heard how they managed to obtain it, for when Mr. Steeve was arrested I was at the back, and fearing that I was wanted I ran away without being seen. Tom had been in the master's room that morning and put 7*l*. at the back of the shelf, where he kept his law books. I was not there at the time, neither was Mr. Steeve. You know that the rooms were always left open?

"Well, that night the detectives did give them a diamond, and what they said was all true, so far as they knew, but they did not know that I was the real buyer, or that Jan and Tom hated Mr. Steeve. They went to the house and found him asleep. It would have been easy for them to have slipped the diamond into his pocket, but, as it was worth 40*l*. to 50*l*., they did not do so. Jan concealed it in his mouth, thinking, on being searched in the darkness of the night, or the hurry and confusion of such a time, he might get away with it. However they examined him very carefully, and he actually swallowed it. I know it nearly killed him, but he had his revenge." "But how do you know all this? Surely you were not an accomplice in this abominable crime, Jacob?" I said.

"No," replied he, "I knew nothing about it, and never thought poor Mr. Steeve would be in danger, for I knew he was entirely innocent, and I did not know that these two rascals were so spiteful against him. I would have confessed my own guilt on former occasions. I would have given my life to save his. I would have begged the magistrate to hear me, but there was no time to do. When I heard all particulars the poor gentleman could not be helped for he was dead. I was very sorry for it, Doctor, but it was too late." "And how did you learn these particulars?" I asked. "Oh," he replied, "there is a sort of Freemasonry amongst all who are in the trade. I was stealing and selling to a man here, and he told me all about it. Believe me, Doctor, we know the truth about these things, and poor Mister Steeve was not the only man unjustly convicted." "But is it possible that such can be the case, and that really innocent men may be condemned?" "Sir," replied the dying man, raising himself with difficulty on the bed—his energy giving him temporary strength—"There is not a white man on the fields that is not at the mercy of any couple of black scoundrels who may conspire against him." He fell back on the bed, and in a few moments all was over. Those were his last words. I fear they were but too true. God help and protect us here—for who is safe?

With regard to the Transvaal Gold Fields a correspondent writes that anyone who has been on the old gold fields at Pilgrim's Rest knows that even there, where diggers have been working for years, there is still plenty of ground which has never been tried, and which may yield its golden harvest to some enterprising company, and what is true of Pilgrims' Rest is equally true of every other portion of the recognised gold fields. It was only the other day a very rich gold-bearing reef was discovered at Spitzkop. This farm, which some years ago cost Mr. van Niekerk a lot of money and worry by law-suits about the water rights, recently changed hands for 2000*l*. It is now owned by a French company, represented out here by Mr. Attorney Franck, of this town. He is one of the largest shareholders in the company, and goes to Pretoria by the same post-cart which takes this letter. After arranging about a concession from Government, he proceeds to Europe, where a large company will be floated to work the farm. A few weeks ago some samples, said to be from Perrin's Farm, were tried in Durban, under the auspices of Messrs. Swain, Hope, and Co. The Natal papers gave the results, which were really remarkably good But what proof is there that the samples came from there? Anyone that wanted to invest in a gold mining company would surely want more proof of the richness of the place than the bare word of any man, even if that man should happen to be a partner of Messrs. Swain, Hope, and Co.

There is no mistake about the gold which has been found further south, on De Kaap and close to it. There the gold is genuine; you can go and take it out for yourself, and there are a number who have gone there, and are taking it out.

The disturbances in Mankorane's country appear to be coming to an end, for a correspondent who left Taungs on June 29 informs me that on June 17 the Boer commando, coming out from their laager, hid themselves in the hills surrounding Taungs awaiting an opportunity to capture the cattle that might be sent from Taungs for pasturage purposes. The Boers shot two goatherds, one a boy of about seven years of age, who was killed, and captured some cattle after shots had been exchanged. The Boers lost on their side six killed and three wounded, whilst Mankorane's casualities amounted to three killed and one goatherd wounded. General Ferrara left the Boer laager on June 22 with a flag of truce, and after some negociations, it was arranged that there should be an armistice for 14 days to allow Ferrara to return to Pretoria, consult with the Volksraad, return with General Joubert, who it is hoped will arrange peace on a satisfactory basis. Mankorane is, it is said, willing to become an ally of the Boers, ceding to them certain territory on condition that they protect him, and allow him to settle disputes amongst his own people.

As in all probability Cetywayo will be with you previous to the arrival of this letter, the following may be of interest to some of your readers.

ZULULAND.—Reliable advices just received from Zululand state that Mr. Osborn has been able to persuade the chiefs who had called up their followers for war to send them back to their kraals. As, owing to the delay in the transmission of intelligence this news is fully a week old, it will be seen that this satisfactory solution of an ugly crisis was arrived at prior to any intimation of the fact that Cetywayo is to visit England. CORRESPONDENT.

Kimberley, July 12.

THE GOLD FIELDS ON THE WEST COAST OF AFRICA.

SIR,—In a recent Journal you printed a letter from Mr. Henry Chaster Tait, of Durban, who therein cautioned the public regarding the deadly dangers of the above district, and in which Mr. Tait further expresses his surprise that old travellers like Captain Burton and Commander Cameron should spread such reports of the richness of the ground, and at the same time not speak of its unhealthiness. Leaving Captain Burton and Commander Cameron to defend themselves, which they can well do, and merely remarking with reference to the case Mr. Tait cites in proof of the character of the climate, that he has probably left out a sufficient explanation of the fatality in this instance, and I can easily imagine more than one. I beg to give the following brief facts which are under my own ken.

The Effuenta Gold Mining Company was started in 1879-80, and since then it has employed at least 15 Englishmen overseeing the native labourers, and with one single exception, that of an acclimatised carpenter, who foolishly persisted in exposing himself to the direct rays of the sun, and who died from sunstroke, every one of these is now in England, or at the mines in good health. The Gold Coast Gold Mining Company was begun a few months later, and has employed during that time about the same number of Englishmen, and to the best of my recollection at the moment has not lost a single man. The Guinea Coast Gold Mining Company has now been in existence about nine months, and all their white employees, six in number, were at the latest advices in good health. I cannot give any details of the Akankoo, the French Mine, Messrs. Swanzy's mine, nor the Tacquah Mine, but I know they have not had any experience differing in any material way from the instances given above. I myself lived for five years on the West Coast of Africa, and though I had the usual number of feverish attacks, I was always able on recovery to do my work. I do not wish any of your readers to imagine that the place is a healthy one; it is not, and the least indiscretion in eating, drinking, or exposure at once receives a reminder which may be more or less severe; but I do wish to state, and to prove, that with reasonable habits and the exercise of common sense, an Englishman can live there and do good work for years. JAMES IRVINE.

North Park, Moffat, Dumfriesshire, Aug. 10.

P.S.—My friend Mr. Bruce Wacker, who has lived 32 years on the West Coast of Africa, sailed again for the gold fields last Saturday, as healthy a specimen of John Bull as you will find anywhere.

MINING IN SOUTH AUSTRALIA.

SIR,—Our efforts at gold mining with one or two exceptions have not resulted so far very satisfactorily. The Bird-in-Hand still goes on prosperously, securing highly payable results and paying good dividends. Some adjacent mines bid fair to follow suit; but the crushings at the Echunga and the Lady Alice Mines have been terribly disappointing. A trial crushing from near Blumberg has given a good return—rather over an ounce of gold to the ton of stone—4 tons having been operated upon. One reason why our reefs have not turned out well is that the gold is exceedingly fine, and much of it is so mixed with iron pyrites that the appliances at present available here are inadequate to save the gold.

A little movement in favour of copper mining is going on, and some new and very promising discoveries have been made lately. The best of these, the best indeed it is said since the discovery of the Moonta Mine, is 20 miles beyond the northern terminus of the Port Augusta and Farina Railway. The extension of the line further north will run within 6 miles of the mine. I believe I have alluded to this wonderful lode in a former letter, but have recently ascertained further particulars from a reliable source. Some three or four months ago a working miner took out a claim from which he raised and sent to the Port Adelaide Smelting Works, of the English and Australian Company, about 6 or 7 tons of ore, which the Copper Company bought at 37½ per cent. of pure copper. The lode from which he obtained this has been traced for about 3 miles, and opened at intervals to test it. It is said to be seldom less than 10 ft. wide of solid grey oxide of copper. A shaft 7 by 4½ ft. has been sunk 30 ft. through solid ore, apparently as rich as that which was sold to the smelting company, and in other places the lode appears equally large and rich. A hill considerably over 100 ft. in height shows the same lode from top to bottom. Three men can raise—or quarry would be a more correct word—20 tons of ore per week. The present cost of carriage is 3*l*. 10s. per ton to Port Adelaide, or about 2*l*. 5s. to Port Augusta. Miners' wages there are about 2*l*. 5s. per week. It is not unlikely that this splendid mine, or portion of it, will be offered to the English copper mining adventurers. The reported discovery of cinnabar has not yet been satisfactorily proved to be correct. It is a peculiar red clay, which on being heated smells like burning tallow; it is of a very greasy nature, but I have found no mercury in it. J. B. AUSTIN.

FRONTINO AND BOLIVIA GOLD MINING COMPANY.

SIR,—I find in last week's Journal a further letter from Mr. Seal, in which he repeats the representations made by him at the meeting of shareholders held on the 26th ult., relative to the Cordoba and Garibaldi purchase moneys, and the 6200*l*. borrowed to provide for a part of them. For the benefit of those shareholders who were not present at the meeting of the 26th ult., and to show how little reliance can be placed upon Mr. Seal's figures, I repeat here the statement made at the meeting showing when these portions of the purchase moneys were paid:—

Date of Acceptance.	Date of Maturity of Acceptance.	Amount.
1881 March 22 ...	1881 June 27 ...	£500
„ April 30 ...	„ July 31 ...	800
„ July 1 ...	„ October 30 ...	£1000
„ „ ...	„ „ ...	1000
„ „ ...	„ „ ...	1000=£3000
„ August 28 ...	1882 January 2 ...	100
„ „ ...	„ „ ...	200
„ „ ...	„ „ ...	200
„ „ ...	„ „ ...	500
„ „ ...	„ „ ...	500
„ „ ...	„ „ ...	500= 2000

5000*l*. of the 6200*l*. was borrowed on Oct. 12, 1881, and 1200*l*. on Dec. 31, 1881. With the 5000*l*. the board repaid to the company's revenue account the 500*l*. and 800*l*. = 1300*l*., and the 3000*l*. of bills maturing on Oct. 30, 1881. The balance of the 5000*l*. with the 1200*l*. went towards paying the 2000*l*. of bills maturing on Jan. 2, 1882. The above figures are taken from the company's books, which both Mr. Seal and his client Mr. Sutherland have inspected. The persistent attempts on Mr. Seal's part to misrepresent such simple facts are in my opinion highly reprehensible. They not only tend to create an undeserved prejudice against the directors, but what is of more importance they greatly damage the company's status in the mining market. Mr. Seal in his previous letter made a great point of my not having answered the question put to me by him at the meeting of the 26th ult. as to the names of the persons from whom the Cordoba and Garibaldi Mines were purchased. Had he taken the trouble to look at the directors' report submitted to the meeting of Jan. 17 last he would have found the following explanation with respect to those mines:—

"Since the last general meeting a suit was instituted against the company by the owners of the mineral rights under the company's Cordoba estate, who claimed the timber theron, and who not only sought to make the company account for the timber which had been cut and used for several years past, but also to restrain the company from continuing to cut the timber pending the suit. As the stoppage of the supply of timber from the estate even temporarily would have caused the company serious loss and inconvenience, Mr. Robert White compromised the suit by agreeing, subject to the directors' approval, to purchase all the Cordoba claims, including the mines and mineral rights, stamping mills, buildings, &c., for 4800*l*. As the case was urgent, the directors took upon themselves to ratify this compromise. * * * * In connection with the settlement of the above-mentioned suit, Mr. White also purchased for 3200*l*., subject to the directors' approval, the Garibaldi Mine which adjoins Cordoba, and which, as will be seen by the accompanying plan, connects the company's Nemeñeme and Juan Criollo properties. The mine is noted as being of great value, and in a letter from the company's Medellin bankers, they state it has been looked upon as one of the greatest mines in Remedios, but it is without a sufficient supply of water during the greater portion of the year. This want would be supplied by an aqueduct from the Utá River which would give a 12-head stream of water sufficient for 84 heads of stamps. Mr. White estimates that by an expenditure of about 200*l*. per month, the Garibaldi Mine can be brought into a highly profitable state. As regards the Cordoba Mine its purchase was on account of the value of the timber—almost a necessity. The Garibaldi Mine, desirable as the purchase appears to be, does not stand on the same footing, and it is at the option of the shareholders either to decline the purchase or to resell or work it. Looking, however, to the valuable character of the mine, to its position in reference to the company's other properties, and to the facility with which the Utá water can be conveyed to it, the directors recommend the adoption of the purchase."

With this explanation in his hands there was clearly no need for any enquiry as to who was the vendor of the Cordoba Mine. I have stated in my letter of the 3rd inst., which appeared in your last impression, that the vendors of the Garibaldi Mine were a small native Colombian Company. THOS. EYRE FOAKES,

Chairman of Frontino and Bolivia Company.

Gresham House, Old Broad-street, Aug. 10.

P.S.—I notice that in my letter of the 3rd inst. I am made to say that Mr. Seal states he represents 1200 shares; this should be 12,000. His proxies sent to the company's office did not, however, represent quite 6000 shares.

FRONTINO AND BOLIVIA SOUTH AMERICAN GOLD MINING COMPANY.

SIR,—The correspondence which for some time past has appeared in the *Mining Journal*, and the interest which has been shown in the affairs of this company (so egregiously muddled), have at last brought forth some expression from the Chairman, which it may be well to analyse.

The influential meeting which he speaks of was composed chiefly of some 25 or 30 aged pilgrims, who for some 16 years past may have made their periodical visits to these gatherings, and who appeared so indifferent upon the question of receiving dividends, that practically, in the interest of the general body of shareholders, they may be utterly disregarded. Shareholders can ascertain for themselves in the office of the company our personal holdings, as well as the proxies which have been given to us when asked for; it is, therefore, unnecessary to contradict the statement of the Chairman.

Now as to the purchase of the Garibaldi and Cordoba properties, it will be in the recollection of the proprietors that in one of our circulars (dated Feb. 10, 1882) we specially called attention to the examination of our boundaries. A map or plan dated 1866 was produced at the meeting of July 26, showing conclusively that both of these properties were included in the original purchase, but it was endeavoured to explain away thi s important fact, by stating that the company only possessed territorial rights, whereas they had now secured mining rights. By which process the company have paid twice over for part, if not all, of these privileges. (See original prospectus.) But the important point to which we draw the attention of the shareholders is that the purchase of the Garibaldi property could not be completed until after the shareholders' meeting in January, 1882, and authority given to the manager, and yet notwithstanding we find in the accounts for the December, 1881, half-year that 6000*l*. was actually borrowed from the agents of the company in South America for this purpose. This speaks for itself, but at the same time it raises a grave doubt as to whether all or only a portion of the 8000*l*. has been paid *bona fide* for these properties. The Chairman pleads utter ignorance of the vendors. It is important to know also in whose names the titles now stand. The accounts to the end of December, 1881, state distinctly that there was cash 8758*l*. 14s. 6d. at the mines. Mr. White said there was not more than 1000*l*. It was, therefore, very important for the shareholders to know whether the accounts were reliable, and I pointedly asked the question to elicit the truth. If we had 8000*l*. cash it is clear we could have paid for the new properties without borrowing or without raising so many new shares, or we could safely have distributed as dividend the profit said to be earned during that half-year.

The Chairman most evasively and reluctantly admitted that the 8000*l*. was fictitious, and that instead of cash it was stores and food. This explanation was received by his admiring hearers not only with favourable expressions, but actual applause. Verily the "Old Man of the Woods" has got upon the back of poor Sindbad, and I only hope that shareholders will have the courage in this company, as in others, to rouse up and shake him off before it is too late.

Pursuing our policy consistently and steadily we feel assured of the support of a sufficient number of shareholders, but unless they will attend the meetings, as well as send us their proxies, it may take a much longer period to cleanse the Augean stables than even we feel disposed to devote to it.

With a practical board of gentlemen who know something of mining, and can exercise a healthy control over the general management, there is no difficulty in the mineral of our mines being worked

at such a fair and reasonable cost as to enable a very handsome dividend to be distributed every three months to the proprietors.
Beckenham, Aug. 10. —— W. P. Sutherland.

FRONTINO AND BOLIVIA GOLD MINING COMPANY.

Sir,—I thank Mr. Foakes for the notice he has taken of my letters and should be glad if he will extend his regard a little further. If I am guilty of misstatements the fault of my being so will soon or late fall on myself, and I hope my misstatements will not mislead any one very far. In making this charge against me Mr. Foakes overlooks the fact that I do not ask the shareholders to rely on my statements. I wish, nay, I prefer, that they satisfy themselves by reference to the company's secretary and the books. As to the meeting on the 26th ult. the influential attendance consisted of about 30 shareholders (out of about 600), some three or four of whom hold largely, and I admit they supported, and for a long time have supported Mr. Foakes. If they are acquainted with the facts I have stated, and the conclusions involved in such facts, I cannot understand their giving such support, and I am anxious to know what reasons or influences prevail with them. By all means let them continue to support the Chairman if they believe in him and in his policy. For my part I do not, and I am not without ground for my want of faith. It is true the meeting declined to hear me a second time: but I know the cause I have is a good one, and I can wait till the shareholders see matters more clearly. Mr. Foakes will hardly say that I am seeking to mislead them in wishing them to enquire for themselves.

As to proxies I did not state in my letter of 27th ult. that I had sent in the proxies in respect of 12,000 shares. I spoke of the number of shareholders who had supported our policy, a policy which, bit by bit, the Chairman professes to adopt. And now as to the Cordoba and Garibaldi Mines. Mr. Foakes is good enough to say the purchases were made from "two small Colombian companies." Is this a fair answer to my enquiry? Does he know the names of the companies? If so, why does he not give them? Why was he not able to tell who the vendors were at the meeting on the 26th ult.? As to the purchase moneys I do not doubt the deeds show them to be 4800*l.* for Cordoba, and 3200*l.* for Garibaldi. Anything different would be too transparently dishonest, that the simplest intelligence would avoid. But, Mr. Foakes, why do you not deal with the mode and time of payment for the mines to which I have referred? I have pointed out that according to your accounts you borrowed 6000*l.* in December (1881) half-year to purchase the mines, whilst the books of the company show that you could not possibly have paid more than 2700*l.* in that half-year on account, and that 4000*l.* was not paid till the present year: and the company were charged 200*l.* for the loan of the 6000*l.* How do you justify your accounts in this respect? You may postpone the day or not, but it will come, when these matters will have to be laid before the shareholders. Again, why were the mines conveyed to Mr. White? S. S. Seal.
Serjeant's Inn, Fleet-street, London, Aug. 10.

SUCCESSFUL MINING—CAPE COPPER, SENTEIN, &c.

Sir,—We often admire the way in which a scientific discoverer will push out boldly and fearlessly into the dark with the confident expectation of reaching a grand result. Having laid hold of some grand principle, or having made sure of some leading facts, he is quite sanguine and confident as to the results that will follow. It is through this habit of mind that the most important discoveries and successes in mining have been attained. For instance, it was wholly through a scientific deduction that the renowned Devon Great Consols was discovered. Mining had now received study and become a science, and although our knowledge of the laws which regulate the formation of metalliferous deposits was still limited, yet we are able to say where we might seek and explore for minerals with almost a certainty of success, and where search would be futile. Let me ask what was the position of the Cape Copper Mines when they were acquired by the present company? They have now attained a place amongst the richest copper mines perhaps in the world. The company has already paid nearly 1,000,000*l.* in dividends, and as copper will probably have a further rise on account of the increased demand which will set in when the different electric light companies commence operations, it is highly probable that the dividend for the forthcoming year will be larger than last.

The Sentein property, with equally good management, promises to prove an equal success. In one portion of the workings they put out a cross-cut to intersect the south, or foot capel, left standing by the former workers, when unexpectedly they came into a very large body of rich ore, estimated at 1000 tons, worth 20 per cent. for lead and 30 per cent. for blende. The outcrop of the lode is large, and continues beyond the present workings westward. An outcrop is also visible, no doubt of the same lode, further east, and near the workmen's houses, where it presents a splendid appearance, containing ores in remunerative quantities, but nothing of consequence has yet been done; no doubt thousands of tons of rich ore will be found here. The great difficulty formerly connected with the working of the mine had been the conveying of the ores to the valley below to the washing establishment, which was done, or attempted to be done, by inclined planes, and washing it down through channels built on the mountain side, which plan failed. A winding road was then made for a length of 12 kilometres for carting the stuff down, which mode was found to be too costly and altogether inefficient for the wants of the mine. This difficulty has been effectually overcome by the erection of the wire-rope tramway, which is now an enormous saving to the company. The dressing establishment is entirely worked by water-power, and is now able to treat efficiently the increasing output from the mine. —— One who Knows.

MINING IN IRELAND.

Sir,—In the issue of the Irish Insurance, Banking, and Finance Journal for this month, in an article on the Mining Company of Ireland, I find the following:—"It is somewhat disappointing to find while certain English papers, notably the *Mining Journal*, are constantly calling attention to the large quantity of minerals which exist in this country, that so little has been done to work them practically and productively." There is, I am sorry to say, too much truth in this statement. There is no want of minerals in Ireland, but there is a want of adequate capital to utilise them. When the old machinery is worn out, it cannot be replaced, and when improved appliances are introduced they cannot be availed of. Hence the backwardness of the mineral resources of this country. It does not arise from want of sufficient hands to do the work. These are numerous, willing, and capable. This is shown in the English and Welsh mining districts where large numbers of Irishmen are employed. Having no room for employment at home, they flood the labour market abroad, and thus help to keep down the wages of native workmen. This is a matter in which the mining interest has a large concern, and it is with the view of calling attention to it that I trouble you with these remarks. The remedy is not far to seek. Let it once be known in England that money is to be made by working Irish mines, and it will be sure to be found in abundance for that purpose. The occurrence of the Egyptian war and other causes will be the means of keeping British capital out of foreign enterprises, and this makes it a favourable time to bring forward the subject of the natural resources of Ireland. For doing so in a practical and systematic manner your Journal is entitled to much credit. I trust you will continue your useful efforts in that direction. In the meantime, we ought not be content to remain idle here, and with respect to this a very good suggestion has been made in the journal I have already quoted. It says: "There is much force in the suggestion made at the meeting—*i.e.*, of the Mining Company of Ireland, that it would be well if the shareholders received a half-yearly report from the captains of the mines; and its publication in the *Mining Journal* would be likely to do good by bringing the affairs of the company under the notice of that portion of the English public who would be interested in its operations." I trust the recommendation will not be lost sight of by the directors of the above company, but it is equally applicable to others. Indeed, it is the usual rule for the conductors of Irish enterprises to "hide their light under a bushel," and then complain of want of support, when the fault rests mainly with themselves. Because they are known in a narrow sphere, they imagine that their existence should be recognised by the world, and find out their mistake when it is too late. Now that public attention has been directed to the matter a better state of things may be produced. It is, at all events, desirable that it should be in the social and material interests of this country. As I have said, your valuable support in bringing about the accomplishment of this object cannot be over estimated, and it is to be hoped that in due time they will produce substantial results.
Dublin, Aug. 7. —— P. A.

VENTILATION OF COLLIERIES.

Sir,—Having taken an interest in Mr. John Onions' patent for the better "Ventilation of Mines and for the extinguishing of fires therein, &c.," I called his attention to a paper read some months ago by Mr. Galloway at York, and which has elicited the accompanying comments from him. If you will kindly publish them in your Journal this week it will, at all events, tend to ventilate this matter, for whatever may be the present appliances it is patent to all that they are totally inefficient to prevent periodical disastrous accidents. Hence a Government enquiry, but so far without result.
London, Aug. 9. James Thornton.

It is notorious that notwithstanding all the scientific and engineering skill and philosophy hitherto made known nothing has yet been done completely to eradicate those devastating enemies—inflammable gases and choke-damp. A large fan at the top of the upcast shaft is in the opinion of many mining engineers the most efficient means yet put in practice; but may I ask where there can be found any pit where a fan is used in which the interior workings are wholly clear from the danger of explosion of gas, or where the men can breathe pure air? I maintain that a fan at the top of the pit does not exhaust the gases or vitiated air from the interior workings of the mine, but only causes a flow of air in the vicinity of the shaft, while the air, &c. remains in a quiescent state in the interior workings. With respect to the cause of these explosions there appears to be a great difficulty in solving it, as in the case of the catastrophes at the Seaham Colliery, at the Pentre pit in the Rhondda Valley, and elsewhere. I attribute the non-adoption of novelties offered by inventors to the jealousy of mining engineers, and their fear lest they should damage their repute.

At the British Association at York in September last, Mr. Galloway read a paper wherein he describes the interior of a coal mine and its workings, which certainly is a difficult task, as there never were two collieries alike. Of course there are various roadways as stated, and many workings and facings, but to prove that when an explosion takes place the flame passes first to the bottom of the shaft and inwards to the face of each district other than the one it might be supposed to have originated puzzles me. He further stated that the flame also filled each district of the workings in the most complete manner, and branched out into each roadway to its very end. Was this the result of practical observation? If so his experience differs very widely from mine, as I have known a pit, the Blue Fly, at Dudley Port, where 33 men and five valuable horses were burned and brought up dead from an explosion which took place in one side of the pit's workings, while the men on the other side of the same pit only knew first by a noise, then by the stoppage of the pit's workings. Moreover, the men from the other (safe) side assisted in bringing out the dead and injured from the side of the accident, several of whom were got down by the choke or fire damp, which is a deadly foe, but not inflammable as stated by Mr. Galloway in way of solving the problem how to account for the pressure of flame in every nook of every district of the workings; at the same time the mechanical effects were of the most trivial kind. (Surely this is mere chimera.) Mr. Galloway is quite right when he admits that it has never been suggested or admitted in any case on record that all districts of workings were filled with explosive gas at the same time—*i.e.*, at the instant of the explosion. Certainly not, for such never has nor never can be either witnessed or proved. I have known that where the gas had caught fire that the flames flew back into the workings in the same (first) side and returned with ten-fold fury and passed up the shaft (as fortune had it in this instance) with little damage; but if Mr. Galloway's theory had been correct the other workings or side which were then not at work would inevitably have caught light—*i.e.*, if the flame had (as stated) filled every nook of every district in the pit.

With respect to an abnormal quantity of fire damp evolving from the strata at the moment of the explosion I cannot find where or in what strata this irregular fire damp exists. Gas may exude from any fissure invisibly, and ought to be drawn out of the workings, gobs, and all such places in the pit where gas or foul air does exist or is likely to accumulate by the use of large exhausters or air pumps through pipes properly arranged for the purpose. As regards coal dust forming an inflammable mixture with pure air I cannot conceive how such combination can be self-effected, neither how it can so speedily obtain so high a degree of caloric as to set on fire the whole of a pit or any part beyond the vicinity of the outbreak (or explosion.) I have also read of an attempt to fire a pit at Usworth Colliery, near Sunderland, by placing a box of matches on the rails where over 1000 men and boys were engaged at work. I would suggest that by the use of a new patent just secured by Mr. J. Onions that no gas could accumulate in any part of a pit (if properly applied) so that it would be out of the power of any person to commit such a dastardly act; neither would there be any danger at all of fire by explosions of gas where his apparatus was adopted. To effectually obtain a good and efficient ventilation there must be a great draught produced by large air pumps through pipes or passages leading from the very extremity of the interior workings of the pit or mines, and with branch pipes to all parts of the pit where such may be deemed requisite, the draught of air to be sufficiently drawn from the workings so as to cause a current of fresh air to pass through the whole pit, carrying the lighter gases therewith through the said pumps, pipes, &c., passing it up the upcast-shaft, and so rendering impossible any accumulation of gas or any noxious air or vapours to remain sufficient to endanger the life or health of the workmen. I know of nothing so likely to accomplish this so much needed purpose as an invention just patented by Mr. John Onions, and by which invention he can also extinguish fire in pits or elsewhere without water.

P.S.—It has been pointed out that the employment of fans in any proportion to the power necessary for producing ventilation (even imperfect) is far more costly and less effective than would be the use of his patent.

NORTH METAL MINE.

Sir,—I visited this mine on Thursday last, when the shears was being raised from a horizontal to a perpendicular position over the engine-shaft; but, owing to the breakage of one of the pulleys, the work was not completed before the following (yesterday) morning. The shears is a very substantial one, weighing many tons. The balance-bob is complete, and the pumps will be let down the engine-shaft almost immediately. The flat rods (iron) to connect the bob with the engine are on the ground, also the launders for the conveyance of the water from the shaft to the engine pool, for condensing and other purposes. The engine pool is inclosed by a substantial masonry wall. The shaft 30 fms. deep, under adit, is said to be very firm; but the adit—about 15 fms. deep—was choked in several places. It is now nearly clear for the egress of the water to be pumped into it. The pumping engine (32-in.) is in good condition; it only requires a little cleaning to make it bright in those parts which are usually kept so in most mines. By the time the battery for reduction of the tinstone is required, it will be in readiness for its work, all the appliances being at hand (new).

The adit is extended about 100 fms. into Great East Vor, which is contiguous at the east to North Metal. This mine belongs to the same proprietors as those of North Metal, who are also the proprietors of New Great Wheal Vor, lying at the north-west of both. The business of the ironfounders has somewhat delayed the completion of the preparations for pumping; but everything being now on the mine, Capt. Ridington, the resident agent, says that all will be in readiness for starting the engine in three weeks. A visitor (not a shareholder) at the mine on Thursday told him that if he got everything ready by the end of the current month he shall have a dozen of champagne and a new hat; and Capt. Ridington agreed to forfeit a month's salary if he failed to get it ready by that time. The engineer (Mr. Eustace) put a less time than three weeks for the completion of the work. As to the prospects of the mines I have, in a former letter, expressed a firm belief in their success—situated as they are in relation to the Great Wheal Vor, once the richest tin mine in Cornwall.—*Truro, Aug.* 5, 1882. R. Symons.

SHROPSHIRE LEAD MINING DISTRICT.

Sir,—Out of all the mines that are on the fine veins of rich lead-bearing ground here there are but a very few being worked, and those are amongst the best in the country. Certainly there is money being spent in the unwatering and opening out of the Bog and Pennerley Mines; but they are not a speculation, for they are known to be good paying mines if once put into a working state, which is now being done, and I am glad they are in the right folk's hands, who, it is very evident, are determined to struggle on with them in these dull times, and bring them into a profitable state, and I say it is sure to come to pass, and before very long. Miner.

MINING IN CARNARVONSHIRE.

Sir,—With regard to the Llanrwst district your North Wales Correspondent has in last week's Journal given us a lively sketch of the past, the force of which is equally applicable to-day. But will the required levels be driven is a question asked me almost daily by my correspondents? The Coedmawr Pool deep adit is now being driven by rock drills from the south-west side, and my friends have almost completed arrangements for running a deeper level from the Conway on the east side, and on the same group of east and west lodes.

As to the Beddgelert district your Correspondent is also partly correct in his statement. Mr. Roberts is engaged making an exhaustive survey of the Maudslay Mines, where we intend running a series of deep levels by rock drills under well-known copper deposits, and, thanks to the energetic action of the spirited proprietor, roads and buildings are taking tangible form, and the miners' hammer is again heard in the long-silent mines, and with the near prospect of a railway the romantic and dear old valley is again on the eve of becoming a centre of activity, and may, we trust, great prosperity.
Maudslay Mine, Aug. 9. —— Chas. Kneebone.

WHEAL AGAR.

Sir,—There are a few mines in the Camborne district and elsewhere the adventurers in which have exercised patience the most exemplary, but in none so extensive as that in relation to Wheal Agar. How long it has been at work I cannot say with certainty, but it was working in the year 1849 or 1850, when I surveyed the sett for the late Mr. Joseph Lyle. I believe that operations commenced 10 years before that date, and calls have been made with tolerable regularity from the commencement till now. The amount called up is 15*l.* 16s. per share, which is likely to be returned from the rich discoveries of tinstone on the same lode as that which is rich in East Pool. If Mr. Waddington had allowed the so-called managers to manage the works it is probable that dividends would have been declared long ago; but he will be meddling, and so things have gone wrong. Doubtless he intends well, but as he is not qualified to manage a mine he ought to have left it to those who are qualified. The tin is under water, and I suppose that some time during this century it will reach the surface. R. Symons.
Truro, Aug. 5.

BASSET AND BULLER CONSOLS MINES.

Sir,—Operations were commenced some time since in these mines by an influential company under the management of Capt. Richard Pryor, who has erected a powerful pumping engine, and the other necessary appliances are being got ready as fast as possible, and in the course of a short time the draining of the mines will be commenced. The fact of their being contiguous to Wheal Basset leaves nothing to be desired, as the very rich lode recently cut into in the latter mine also traverses Basset and Buller Consols, a fact that would seem to warrant any reasonable outlay, and from the information given to the writer by those who know the district, leaves no doubt about Basset and Buller becoming one of the prizes in the now justly celebrated southern range. I noticed there are several houses such as account house, smith's shop, &c., also a very powerful steam stamps, so after the mine is drained returns will be quickly made. J. T.
Camborne, Aug. 9.

HUNTINGTON SULPHUR AND COPPER COMPANY.

Sir,—On May 13 last a letter appeared in the Journal by a shareholder who had inspected reports sent home by Capt. Nance, and although his statements as to figures were not substantially correct, still his advice to shareholders to hold by their shares and not dispose of them at their present depressed market value was quite justifiable, which is now borne out by the annual report and balance-sheet issued by order of the directors, and although their market value is still further depressed, it is undoubtedly by the operations of speculative "bulls," and not owing to the company having lost 5508*l.* by their year's trading. No *bona fide* transactions had taken place, as the transfer-books of the company will show. It is a simple matter for anyone to analyse the balance-sheet, by which he will arrive at the true state of affairs. The company's assets stand at 96,281*l.* 2s. 1d.; from that deduct their indebtedness to the public 6780*l.* 9s. 3d., leaving 89,500*l.* 12s. 10d., which, divided into 15,970 subscribed shares, gives 5*l.* 12s. per share. Or take it thus:—From the 89,500*l.* 12s. 10d. deduct amount expended in exploring and developing mines—8578*l.* 10s. 8d., which leaves 80,922*l.* 2s. 2d. of real property, divided into 15,970 shares, gives 5*l.* 1s. 4d. per share. Again, to take the pessimist view possible—if the concern were to be wound up its property at the very lowest estimate would realise 10s. per 1*l.*, or 2*l.* 10s. 8d. per share. In the face of these facts the shares have been "bulled" down to 19s. The proposal which will be laid before the meeting to authorise the creation of preference stock should meet with the approval of every shareholder; and the sooner there is new blood imported into the directorate the better for all concerned, as the management has been gone about in a piecemeal way—frittering away both time and money when it is known there is abundance of ore, with a purity of metal that cannot be surpassed or command a higher price in the market, which, with energetic management, would be remunerative to all interested. Shareholders who cannot attend the meeting would do well to forward their proxies to Mr. Gray, the two gentlemen whom he will propose for the directorate are both well qualified for the duties, and they would be a great acquisition to the company. J. S.
Glasgow, Aug. 10.

[For remainder of Original Correspondence see Journal.]

Anderton (Tin).—This mine attracted a good deal of attention on the late holiday, and a visit to such a property is a sensible way of getting to know the truth in making mining investments. This seems a unique mining property, producing tin of high quality and in large quantities. It is being worked at a shallow level on a lode hitherto not known on the property, and in a few weeks has sprung into a satisfactory and paying condition. Anyone who takes the trouble to visit Anderton cannot but be convinced that the estimate of 100*l.* a fathom in the lode now being worked upon is not an excessive estimate. When it was just laid open it was valued by Capt. Josiah Thomas, of Dolcoath, at 50*l.* a fathom, and Capt. Charles Thomas found 20 per cent. of black tin in what he tried. It has since been further opened up and its increased value proved, and riches of this sort are to be met with in the lode and on the floors at every point. They are now erecting additional buddles to get quickly through the dressing of the stuff which the stamps knock down with comparative ease, and other and additional machinery is under consideration. Only the few who know something of this mine and believe there are valuable mines at home look it up and interest themselves in it, although its riches are at their own doors, and the truth can be ascertained in a day. Anderton will well repay anyone to make an inspection who wants a safe investment. It is easily

accessible and speaks for itself in a way which cannot be misunderstood. It is very gratifying to find such home mines as this so full of life and larger promise.

REPORT FROM CORNWALL.

Aug. 10.—Under any circumstances the occurrence of the last big holiday season for the year before the advent of winter would have made mining business somewhat dull, and August itself is almost always a quiet month. When, in addition to these influences, we have the fact that the tin standards went back so unaccountably when they were expected to advance, it is almost a wonder that instead of inaction we have not to report positive reaction. To be sure there is nothing to react about, but that, as a rule, makes little difference with some people, and if there is comparatively little business done it is a matter of great satisfaction that for that business prices have been so fairly well sustained.

The foolish strike of the boys and girls at Phœnix United came, as we anticipated, to a speedy end. Wholly ill-advised, and unnecessary in any way, it is well that it should have succumbed so speedily. None the less, however, has it done its work. Attention has been called to the desirability—nay, the absolute necessity—of minimising the surface labour on the mines, and making dressing, as we have said before, as automatic as possible; and sooner or later that end will be accomplished, certainly not a whit the later for this stupid business at Phœnix United. An odd time to choose indeed to create labour difficulties when the fate of South Caradon is trembling in the balance, and something more. We heartily wish there were more satisfactory news from that quarter.

Elsewhere there are decidedly satisfactory signs of progress. Levant, we are told, is about to declare a well-earned dividend. The famous Providence Mines are likely to have another trial, and, we hope, a successful one—there must be an immense quantity of material yet unwrought in that sett. West Seton, which has avoided a call, is, we are told, likely to make a profit, and to become as big a tin mine as any of its neighbours. Wheal Eliza Consols, about which very few people know anything except the fortunate shareholders, is stated to have better prospects than ever, having in addition to the well-ascertained reserves on the old lode, a new side lode nearly two miles in length in their sett in whole ground of equal promise to the main lode, which has yielded such returns. Crumbs of comfort there from all parts of the county.

Speaking of West Seton reminds us that there are abundant signs that the labour question must force itself to the front, and be dealt with in some way or other. Capt. C. Thomas, at West Seton account, endorsed fully the remarks made the other day by Capt. Teague. Surface hands were discontented at the least thing, and did not do more than three-fourths of the work they used. Well, as we said of the boys and girls' strike, the real remedy will be the substitution of machinery; and in the meantime, Capt. Thomas's proposed extension of the contract system may do something. Capt. Thomas credits the Salvation Army with being one of the counter "draws." We do not know whether he has any special reason for coming to this opinion; but it is hard to us why anxiety for the next world should prevent a man or woman doing their duty in this, and it would be an odd sort of conversion or reformation, or whatever it may be called, that had the effect of making people rob their employers by causing them to neglect the work for which they were paid.

There are some edifying facts in the report of Mr. Frecheville to which we have not hitherto referred, and which we may commend to the notice of intending investors to serve as the bases of enquiries. He reports on 194 mines in Cornwall. Of these 37 employed less than 10 hands, and 22 over 10 and less than 20. He reports on 52 mines in Devon, and of these 17 had fewer than 10 hands, and six over 10 and less than 20. Here are plenty of good tests for magnificent pretensions; if not infallible, at least noteworthy.

TRADE IN SOUTH WALES.

Aug. 10.—Coal: The exports of coal from the principal South Wales ports for the month of July were as follows:—Cardiff, 507,625 tons foreign and 75,317 tons coastwise; Newport, 105,982 tons foreign and 68,893 coastwise; Swansea, 82,993 tons foreign and 62,179 tons coastwise; Llanelly, 6221 tons foreign and 10,945 tons coastwise. The amount sent away last week from Cardiff was 111,713 tons foreign and 20,671 tons coastwise; Newport, 18,595 tons foreign and 20,566 tons coastwise; Swansea, 21,359 tons foreign, and 9226 tons coastwise. Good colliery screened are still quoted at 11s. per ton, and that price will not be lower, it is anticipated, even if it is not higher. Of patent fuel Cardiff has exported during the first seven months 100,166 tons, and Swansea, 159,729 tons; of coke, Cardiff, 19,301 tons, Newport, 4224 tons, and Swansea, 6455 tons.

The Royal Mines Commissioners have completed their experiments in the Rhondda Valley. As far as can be gleaned, the Commissioners are "anything but thoroughly satisfied" with the structural character and light-giving propensities of any of the existing lamps. They have already virtually condemned the Davy and the Clanny, for, in their preliminary report they pointedly state:—"The employment of the ordinary unprotected Davy and Clanny lamps in an explosive mixture where the current exceeds 6 ft. a second is attended with risk of accident almost amounting to a certainty." Experience adds constant emphasis to this view. One of the most able mine inspectors, Mr. Evans, in his report to the Home Office, remarks that the ordinary Davy lamp is not such a one as ought to be entrusted to workmen to be used in a fiery colliery, for it is only safe in very slow velocities, when used with the greatest care. Mr. Evans goes even further, and states that it is probable that some of the great explosions, which have been attended with so serious a loss of life, may have arisen from the great confidence formerly placed in the mode of lighting. Ready assent will be accorded to this hypothesis by those connected with the South Wales coal field, whose ears are still tingling with remembrance of the sad disasters of the past. Foster and Plews's patent safety mining lamp is by implication recommended by Mr. Bell, another inspector, whilst a third inspector, Mr. Wardell, asserts that the Stephenson is "one of the safest lamps;" it has frequently been put to severe tests in his district, and has on more than one occasion providentially obviated serious calamity.

This last gentleman also lays strong stress on the system adopted at several collieries of testing safety-lamps by means of gas before giving them into the hands of the workpeople. The lighted lamp is passed through a ring of unlighted jets of gas. Lamps examined in the ordinary way, and passed as safe, have, when subjected to this test, been found, it is said, defective. Mr. Wardell adds words of weighty import:—"The safety-lamp where used must be always accompanied by constant and adequate ventilation. This ventilation is of just as much importance in such cases as in those where naked lights are used, and it is very desirable that the deputies should make the examination of such working place as short a time as possible before the man or men go to work there." The first fruits in South Wales of the recent investigations of the Commissioner are to be seen in the two or three safety-lamps designated as "new," which have just made their appearance. But as the Mines Commissioners have not yet made any specific recommendations as to the safety-lamp of the future, managers are in a dilemma, and withhold patronage of fresh inventions. They cannot be expected to incur the expense of at once substituting on speculation new lamps for old lamps, though the former may, *prima facie*, be superior to the latter. Nothing definite can be done in this direction until the full text of the final report of the Commissioners has been issued. It is interesting to note that there are 3551 safety-lamps used in the eastern district of Scotland—1494 gauze, 828 Davy, 411 Protector, 394 Clanny, 240 Jack, 160 Williamson, and 24 Mueseler.

The exports of iron and steel from the ports of South Wales in the first seven months of the present year were—Cardiff, 78,086 tons; Newport, 108,408 tons; Swansea, 5113 tons. Last week Cardiff sent away 4359 tons, and Newport sent 1850 tons to Algoa Bay, and 454 tons to Paraiba. Of iron ore Cardiff received 16,685 tons from Bilbao, and 3597 tons from other places; Newport, 11,546 tons from Bilbao, and 4765 tons from other places. The price is from 15s. to 15s. 3d. per ton. A return just issued shows that in 1881 Swansea received 68,861 tons of copper, 16,714 tons of regulus, 8680 tons of unwrought and partly-wrought copper, and 408 tons of old copper, while the same port sent away 1883 tons of unwrought in bricks, pigs, &c., 224 tons of yellow or mixed metal, and 15 tons of wrought copper of other sorts. Tin-plates are now quoted at Liverpool at from 16s. to 16s. 6d. per box for coke-made, and charcoal-made from 19s. to 20s. Tin is 5*l.* per ton cheaper, which is a great relief to manufacturers.

The Bute Dock Bill has passed the House of Commons, and will be built in the course of two years by means of the modern steam appliances for cutting clay, &c.

TRADE OF THE TYNE AND WEAR.

Aug. 9.—There is no change in the state of the coal and coke trades here. The shipments on both sides of the Tyne, and also in the Wear, have been large during the week—extremely heavy considering the time of year. A dispute has taken place at one of the collieries of Messrs. Straker and Love, in the Auckland district, South Durham. The dispute occurred respecting the heavy price paid for working the Tet seam at Brandon Colliery, the men refusing to work the seam for the price paid, and the miners at all the works of the company at Brancepeth, &c.; 2000 hands have turned out also for the purpose of enforcing increased rates, no doubt. This action on the part of the men is both absurd and unjust; the dispute ought certainly to have been arranged by arbitration or by the joint committee which has been permanently constituted for the settlement of such disputes without any stoppage of work. Messrs. Straker and Love are about the largest cokemakers in the county of Durham, and if the strike is prolonged the consequences will be serious. The subject of the dispute was before the joint committee at Newcastle on Monday, and two delegates were appointed on each side to investigate the matter and to endeavour to effect a settlement. At present, however, there is no prospect of an immediate settlement being arrived at. Some hundreds of summonses have been issued against the men for breach of agreement, and the men will have to answer those summonses on Saturday at Durham. It appears that the Tet seam was worked some eight or nine years ago, when the price paid per score was 19s., and the men are now asked to work it at 10s. 10d. per score. There appears to be a lamentable want of temper shown in this case, on one or perhaps both sides. When the seam was worked formerly the coal famine existed, and the price paid at that time (1873) cannot possibly be expected to rule the present price. Only four men were asked to work the seam at the present moment, and it appears to be monstrous to throw out 2000 men under the circumstances.

The re-opening of the old colliery in Gallowgate, Newcastle, is now far advanced; this colliery was worked about 30 years ago, but at that time only the top seams were worked. The shaft has been re-opened by the Elswick Coal Company, and they will sink the shaft down to the lower seams—to the Buckwell and Beaumont seams—and ultimately the workings will, no doubt, be connected with those of the Elswick Colliery. There is a large royalty attached to this colliery in the Nun's Moors and adjacent grounds. An engine of a novel description has been erected at this place, the first engine of the kind which has been erected as a permanent winding-engine in this coal field. This engine is by Fowler, of Leeds, an engine of the compound type. There are two cylinders, a low-pressure cylinder by the side of the high-pressure cylinder. Each has a separate steam chest, with a slide valve worked by an ordinary eccentric. The steam after expanding twice in the high-pressure cylinder enters the steam chest of the low-pressure cylinder, and expands in the latter about six times its original volume, and is discharged very little above the atmospheric pressure. This engine is considered to be superior in economy to any but the best expansive condensing engines, the consumption of coal being 2·8 lbs. and of water 25·5 lbs. per horse power per hour. When we consider that ordinary colliery engines consume enormous quantities of coal, varying from 8 lbs. to 25 lbs. per horse power per hour, the value of the engine will be appreciated. It has generally been held that as the small coal consumed by colliery engines was of little value the consumption of fuel was of little consequence; but these coals have increased very much in value of late, and the introduction of improved engines thereupon becomes a question of much importance. This winding-engine is 50-horse power nominal, but capable of being worked up to 150-horse power. The steam is generated in a multitubular boiler, and the pressure used 150 lbs. per square inch.

There has been a fair business done in the chemical trade on these rivers of late, but we cannot notice yet any great advance in prices. The introduction of salt from the recently discovered beds of this valuable mineral on the banks of the Tees may, however, favourably affect the chemical trades here. Messrs. Bell Brothers have been pumping brine for some time from those beds, and they have lately commenced to make salt at the new works at Port Clarence, and they will be in a position to sell salt very shortly to the chemical works here. The working of those salt beds is also likely to be extended. Messrs. Allhusen, the large chemical makers on the Tyne, are in treaty for a royalty when they can work the salt, and Bolckow and Vaughan, who first discovered the salt beds on the south side of the Tees, by means of a bore hole put down in search of water, are also intending to work these extensive beds of salt. The effect of the introduction of this salt into the chemical works on the Tyne and Wear must be important, as the transit from the Tees to those rivers is trifling compared with the cost by rail from Cheshire, from whence most of the salt consumed in our chemical works is derived. The first contract for 300 tons of Cleveland salt has been made between Bell Brothers and the Tyne Alkali Company. The price is understood to be about 9d. per ton less than Cheshire salt.

The pig-iron trade has been rather quiet this week. The market is rather sensitive to the state of the Scotch iron market, so far as merchants and speculators are concerned, but makers are very firm. They are well sold, and will not give way to any extent at present. The shipments continue fairly good. Large purchases have been made on Continental account, and shipments are expected to be large to foreign ports. Both makers and manufacturers are now clearing a fair profit. A good deal of enterprise is shown in the district, as is evinced by the purchase of the Moor Ironworks by Dorman and Co. These works can produce about 1200 tons of shipplates per week. The wages of the ironworkers are this week raised 2½ per cent., upon the award of Sir J. W. Pease, and a further 2½ per cent. will be due in six months from the present time. A new arrangement will have to be made at the end of October. The returns of the ironmasters has caused some little disappointment, but on the whole they are fairly satisfactory, as, if the decline in stocks continues, the position must improve. There is no change of consequence in the value of pig or manufactured iron. Pig-iron, No. 3, is now 44s. per ton.

North of England Institute of Mining and Mechanical Engineers.—The annual meeting of members was held in the Wood Memorial Hall, Newcastle, on Saturday. The president, Mr. G. B. Forster, in the chair. The secretary, Mr. Bunning, read the annual report of the finance committee, which stated that the finances of the Institute are in a very satisfactory condition. He next read the annual report of the council as follows:—"The thirtieth year of the institute has been one of uniform prosperity, the progress made has been of a permanent and solid nature, showing that the Institute is becoming more and more secured against the fluctuations of the funds derived from subscriptions. There is no doubt that the Institute has felt considerably the great depression which has prevailed during the past few years, and that has prevented its progress being equal to that of some former years, but, on the whole, there is no reason for complaint. There have been many valuable additions to the library, and exchanges have been made with a great number of foreign societies. This has been done to such an extent that few if any libraries out of London are in possession of such valuable information respecting the progress of mining science in all countries, and this has enabled the council to publish extracts and translations from such foreign papers as seemed to deserve particular attention, which will materially add to the interest of the transactions. In this the council have been assisted by Professor Lebour, who has devoted much time and attention to this department. The papers read before the Institute during the year have been exceedingly interesting. The reports were confirmed upon the motion of the president. The election of officers for the year took place, and Mr. Forster was again elected president. A paper on "The Hematite Deposits of Furness," an abstract of which is published in another column, was read by Mr. J. D. Kendall, and a discussion took place upon a paper by Mr. T. J. Bowlker, on Bowlker and Watson's ventilating fan.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Aug. 10.—The current output of furnace and forge coal is going steadily away from the pits, but the demand is not such as to call for any increased output. The probabilities point in the direction of any increase which may occur being in forge rather than furnace sorts. Of this quality the consumption may be said to be slowly but surely gaining ground. Prices are about 6s. to 7s. at the pits for good Staffordshire forge coal, and 7s. 6d. to 9s. for furnace sorts. Ironstone and cokes are quiet, but vendors have recently done very well, and do not now, therefore, grumble. Northampton stone delivered into this district varies from about 5s. 4d. to 5s. 8d. per ton. South Yorkshire cokes are 15s. 6d. delivered; South Wales washed furnace cokes, 17s. 6d.; and Welsh best foundry cokes, 21s. to 23s. These were the prices quoted by vendors in Birmingham this afternoon. Pigs continue quiet, though in one or two directions there is slightly more movement. Leicestershire part-mines are quoted this week at 50s., which is an advance of some 2s. 6d. per ton, but the vendors hardly expect to do business at the figure. Thorncliffe (South Yorkshire) pigs were priced at 60s. delivered. Native all-mines are 65s. to 67s. 6d.; part mines, 55s., and cinders 40s. to 38s. 9d. Manufactured iron keeps in good demand at 7*l.* 10s. to 6*l.* 5s. for bars, and 8*l.* 5s. for galvanising singles. Tin-plates dull.

Mr. J. P. Baker, Mines Inspector, summoned before the magistrates at Willenhall on Tuesday several colliery attendants for offences under the Mines Regulation Act. William Smith, engineman, at the Priorfield Colliery, Bilston, was fined 40s. and costs for neglecting to observe the 28th general rule of the Act by refraining from complying with directions given him. John Gough, overman at the Clotheir Colliery, Willenhall, was similarly fined for having left his post without leaving a competent person in charge. John Harper, overman at the Priestfield Colliery, Bilston, was also fined 2*l.* and costs for absenting himself from his post.

In the Birmingham County Court, an action, remitted from the High Court, was brought a few days ago against Messrs. Downing and Price, colliery proprietors, Tipton, by Mary Smallman, of Pensnett, near Dudley, to recover 300*l.* for damages to property and compensation for loss thereby sustained. It was shown that the working by the defendants of the Hallbridge Colliery, at Tividale, near Dudley, had materially damaged five houses in which the plaintiff had a life interest. The houses are situated about 100 yards from the pit-shafts. A verdict for the plaintiff for 120*l.* was eventually entered by agreement.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Aug. 10.—Mining operations in North Derbyshire have decidedly improved of late, that is, the raising of coal, for there does not appear to be any change as regards lead. As regards ironstone not one-sixth of what was formerly raised in the county is now brought out of the mines. Ironmasters now depend almost entirely on the stone raised in the oolitic measures, such as is brought from Northamptonshire, where the cost of working is comparatively trifling, whilst a good quality of iron is made from it. At present the ironworks are doing well, for there is a heavy out-put of pig at all the works, of course with the exception of the ore that is standing belonging to the Dodsworth and Silkstone Colliery Company, which is now in liquidation. A considerable quantity of the pig has been sent into Staffordshire and Lancashire for the mills and foundries, whilst there is a large absorption at home. In manufactured iron there has not been much change, the mills not running to anything like their full extent; but it may be said that there is only one company of any magnitude in the county where iron is rolled on a large scale, and that is Butterley Works, where there are some seven or eight mills, one-half of those in the whole of Derbyshire. At the foundries a fair business has been done in pipes and other castings as well as in machinery at one or two of them; but the larger works it may be said have specialities to which they adhere, and do not interfere with engines or machinery. On the other hand Oliver and Company (Limited) have their extensive works well laid out for machinery and mining plant, for which they have already obtained a very high reputation. The collieries have been working better than for some months past, and there has been a decided improvement in the trade done with London in house coal. Clay Cross continues to take the lead; but a good deal of coal has also been sent from Grassmoor, Blackwell, Eckington, Staveley, and Tibshelf. The increased demand, however, has not as yet led to any quotable alteration in pit prices; but such should now be made, seeing that colliery owners have not been doing much in the way of making profits or even getting, as a rule, the ordinary per centage on the capital invested. Merchants in the Metropolis have certainly not been making the large profits they have been credited with; but still they have been much better off than those who supply them with the coal. This will continue to be the case so long as the owners of coal mines are content to sell to intermediate persons instead of selling direct to the consumers. Steam coal has been going off tolerably well considering that there is no shipping port near to the field, although the Great Northern are trying to make Sutton Bridge a coal shipping place for the collieries of Derbyshire and Nottinghamshire. Still the situation cannot be said to be altogether a good one, scarcely so advantageous as Boston.

In Sheffield trade goes along steadily, and the workmen, as a rule, are well employed, more particularly in some of the heavier branches. At the Atlas and Cyclops Works they are busily engaged on the steel-faced plates for vessels of war, and some heavy orders are on hand for them. Our own Government are taking extensively, whilst Italy, evidently desirous of taking rank as a first-class naval power, is about to build some more powerful vessels, perhaps not quite so large as the Duilio and its consort, but on a large scale, and for these, it is understood our English plates are to be requisitioned. In ordinary plates there is a steady output, as there is also in sheet; but steel plates have not gone off to the extent that was expected, although the production during the year, so far, has considerably exceeded that for the corresponding period of last year. There has not been quite so much activity as regards steel rails, but Bessemer makers have not been slack, for they have been turning out a rather heavy weight of billets, and making special quantities for other purposes outside the real trade. By so doing they are able to compete in some instances with crucible steel manufacturers. Axles, tyres, wheels, and ordinary railway metals has been in steady request, and wagon builders have also been kept well employed. In the old steel branches of the town there appears to be a little more doing in them, but all are favourably off for business; of course some are doing more than others. In the cutlery departments business continues good, although there has been a considerable rise in some descriptions of the raw material used in the best class of goods. Edge tools have been in fair demand, and manufacturers of sheep shears are particularly active, having heavy lines on Australian and South American account, as well as for other parts of the world. File and saw makers have been doing well, as have those engaged in surgical instruments, razors, and fancy steel goods for the fitting-up of cases of various kinds. At the foundries business has been tolerably good, and coal washing and pulverising machinery is being actively pushed forward in all directions, whilst there is a steady demand for pipes, palisadings, ranges, and most descriptions of house furnishings.

The coal trade throughout South Yorkshire is now much better than it has been during the last four or five months, for there has been an increased enquiry for house coal for the London and other markets, and which may now be expected to continue. As usual at this time of the year large quantities of coal have been sent from the district, both by canal and railway, to Hull and Grimsby for

shipment from those ports principally to the North of Europe. A considerable tonnage has also been sent to Goole, which is what may be termed an inland port, having been communicated with the Humber by the Aire and Calder Company, and who have offered excellent facilities for the shipment of coal.

REPORT FROM OXFORDSHIRE.

Aug. 10.—In this, the most recently discovered of our ironstone fields, and to which we drew attention some time since, it appears that it has been found necessary to defer the erection of the blast-furnaces, which were to have been commenced about this time. They are to be only a short distance from the old and historical town of Woodstock, and consequently not far from one of the stateliest mansions in the kingdom, Blenheim Palace. This is certainly a great change, by which the sweetest of sylvan scenery is invaded by smoke-emitting furnaces, with their ugly slag-heaps and collections of coal and ashes. Everything, however, has now to give way more to what is below the surface of the ground than what may be grown upon it. One of the principal reasons, however, why the furnaces will not be commenced just at present is the fact that Col. Middleton, of the Engineers, who has taken the leading part in developing the resources of the locality and laying out the works, has been ordered out to Egypt, and, of course, has had to leave the ironstone to take its chance, and the furnace building to remain in abeyance for some little time. Colonel Bolton, we believe, has now taken over the command and is keeping the men at work in making bricks, for which there is plenty of material, so that once the furnaces are commenced there will be no delay whatever. In connection with the furnaces, it may be said that there will be some scientific novelties introduced for the first time that cannot fail to be of more than ordinary interest to our ironmakers in all parts of the kingdom. In the erection of ironworks at a considerable distance from a coal field, all appliances having for their object the economical use of the necessary fuel becomes a matter of the first importance, and we believe that it is in this direction that scientific attention has been directed with respect to the furnaces that are about to be erected in Oxfordshire.

The gases cannot only be utilised, but the consumption of fuel in the first instance may be much less than it now is. As Mr. Stead, the Middlesborough Borough analyst, recently pointed out in some remarks he made on the combustion of blast-furnace gases, there is no reason why there should be anything like the present waste of heat power in the manufacture of iron; and he also stated that he had occasionally detected that one-third of the gas from some furnaces passed unconsumed into the air, which was equivalent to throwing away almost 70 tons of coal per week for every blast-furnace making 400 tons of pig-iron. It is, therefore, evident that there is plenty of room for science to introduce some means for preventing such a costly waste of power. But returning to the ironstone field on the Marlborough estate, in addition to the bricks being made, there is a large quantity of the ironstone being raised and forwarded by railway into Staffordshire, where it is found to be well adapted for either the mill or the foundry. In this respect it appears to be similar to the Northamptonshire, and the probability that the stone in the two counties form a portion of one great field, the northern and southern limits of which have not as yet been defined. The Oxfordshire stone, however, contains a fair portion of limestone, which is, of course, a valuable adjunct as the smelting agent. As a good deal of iron ore is sent from Northamptonshire to South Wales it is probable that some part of this trade will be diverted to Oxfordshire, which is perhaps rather nearer to South Wales than Northamptonshire. there being a straight route from Worcester by way of Gloucester. Altogether the new field in Oxfordshire gives every promise of becoming a most important one, adding vastly, as it does, to our stores of oolitic iron ore.

FOREIGN MINING AND METALLURGY.

Firmness remains the prevailing characteristic of the Belgian iron trade. Finished iron, as well as pig, has been actively sought after. Employment is almost general, and orders continue to come to hand. The future is not sufficiently assured to enable prices to be advanced, but industrials are moving on little by little, and this is perhaps the most desirable state of things. English pig has been well maintained in Belgium, but no very large quantities have changed hands. Belgian casting pig has become scarce, producers maintain a firm tone, and show a disinclination to do business below 3*l.* per ton. As regards refining pig the course of affairs has also been favourable, no fresh transactions of importance have certainly been advanced; but the works are generally well provided with orders, and can regard the future without apprehension. Iron has shown a tolerable amount of firmness in Belgium, efforts have been made to establish a basis price of 5*l.* 8s. per ton, and if these efforts have not yet been successful they are in a fair way of being so, as a quotation of 5*l.* 4s. per ton would only now be accepted in the case of large transactions. In all current affairs a price of 5*l.* 6s. per ton is accepted without discussion. General contracts have even been concluded upon a basis of 5*l.* 8s. per ton, and some of the leading works have been asking 5*l.* 12s. per ton. Girders have been sought after at from 5*l.* 16s. to 6*l.* per ton.

The general tendency of the French iron trade continues favourable. The markets preserve their activity, and orders continue to flow in. In the forges of the Nord working operations are being pressed forward as much as possible. Notwithstanding this, an upward movement whtch had been attempted at Paris has not been sustained; on the contrary, a quotation of 8*l.* per ton for iron in bars is becoming general. Satisfactory tenders not having been received for 200,000 tons of steel rails, required for the French State Railways, it is stated that the French Minister of Public Works will place himself in communication with foreign steel making establishments. This announcement has created a feeling of much dissatisfaction among French industrials. One lot of 20,000 tons of steel rails has been awarded to the Longwy Steelworks at 8*l.* 15s. 8d. per ton, delivered at St. Dizier. The representatives of the principal metallurgical establishments of Austria have held a meeting at Vienna, and have decided to advance the price of merchants' iron produced by rolling to the extent of 10s. per ton. The German iron trade continues to present a favourable aspect; there has even been a tendency to a fresh improvement in affairs. There is especially a good demand for pig of all kinds. At an adjudication for steel rails at Hanover, the Osnabruck Steelworks secured a contract for 2817 tons, at 8*l.* 2s. 5d. per ton.

The future before the Belgian coal trade is considered encouraging, while the Belgian coal trade presents a favourable tone. The tendency of the Belgian coal trade is much firmer, and everywhere a more or less decided advance has been noted. Deliveries have been considerable, and the demand has been more pressing. Coal for metallurgical purposes has been tending upwards at Liége, and at Charleroi and Mons great firmness has prevailed. The imports of English coal into Belgium in the first half of this year amounted to 107,186 tons, as compared with 114,628 tons in the corresponding period of 1881. The aggregate imports of coal into Belgium from all sources in the first half of this year were 440,905 tons, as compared with 456,259 tons in the first half of 1881. The exports of coal from Belgium in the first half of this year amounted to 1,998,696 tons, as compared with 1,955,494 tons in the first half of 1881. In these totals the exports of Belgian coal to France figures for 1,890,401 tons, and 1,844,432 tons respectively. The upward tendency observable in the German coal trade has become more decided. The consumption of German coal for industrial purposes continues very considerable, and the exports appear to be acquiring at the same time a great extension, especially from Westphalia to France, and from Upper Silesia to Austria. The collieries of the Ruhr districts are well supplied with orders.

Gold Mining in Surinam.—The owner of a concession who has not sufficient capital to work the property is said to have succeeded, through the agency of the firm of Messrs. W. Schoeffer and Co., of Rotterdam, in interesting a number of the leading banking establishments of Frankfort in the enterprise. Experiments are to be made to ascertain more definitely the prospects of success, and should these prove satisfactory the banks in question are prepared to take the matter up in earnest. The details are not to be made public in the present stage of the enterprise, as the amount of money so far involved is comparatively insignificant.

REVIVAL OF MINING IN THE CALLINGTON DISTRICT.

STARTING OF LANGFORD SILVER AND COPPER MINE.

Amidst most beautiful weather was on Tuesday, the 8th inst., performed the ceremony of starting the engine of the Langford Silver and Copper Mine. The sett is in the very centre of the renowned silver-producing district of this country. It is part of the old East Cornwall Mine, which 40 years ago, when worked by the celebrated Capt. Malachi, was the richest silver mine in England, no less than 300,000*l.* worth of silver being sold from the mines in the immediate neighbourhood worked by that enterprising manager. The Langford sett has been acquired by the new company from Mr. Langford, from whom it derives its name, by a company with 13,000*l.* capital. There is a strong board of directors, Mr. J. Y. Watson, of London, being Chairman, while Mr. Criper is purser, Capt. Goldsworthy, manager, and Mr. W. Mathews the engineer. The position chosen by Capt. Goldsworthy for operations is near a shaft sunk directly over a junction of lodes, where rich deposits of silver are usually found. During the former working of the mine up this shaft was brought the produce of some very valuable silver lodes, and it is known that several rich copper lodes were left untouched. So the promoters of the mine have good reason to anticipate the discovery of good lodes of copper, besides valuable ones of silver, while they hope, by the use of improved modern machinery, to be able to make marketable silver which before was of too inferior a quality to be worth taking to surface. Immediately over the shaft has recently been erected engine and whim houses, in the former being erected by the engineer a 60-in. pumping-engine, and in the latter a 24-in. whim. There is 17-in. pitwork, and it is estimated that the powerful engine will unwater the mine in a month or two.

At the appointed time a large number of gentlemen interested in mining assembled in the engine-house, amongst those present being Major Mathews, Mr. Criper, Capt. R. Goldsworthy, Capt. Skewis, Mr. S. G. Emmens, Capt. Andrews, Mr. W. Mathews, Capt. Dunstan, Capt. Rickard, Prof. Seccombe, Capt. Gill, and Capt. W. Goldsworthy.

In christening the engine "Watson's Engine," Major Mathews said they were met at the starting of a new engine in a well-known mine. He had many years ago had the pleasure of starting on the same spot, on an occasion similar to the present, and if the present adventurers only reaped the same profits as were reaped by those interested in the old working they would have every reason to be satisfied. (Cheers.) It was pleasant for him to think that the present proprietors had as Chairman of their board a gentleman who had been connected with all the principal mines in Devon and Cornwall, and almost the only man in London whom they in the mining districts acknowledged as a thorough mining authority. (Hear, hear.) Than Mr. J. Y. Watson no man had done more in his time for mining in the two counties; and although a great many foreign mines had recently been started, he had always held that there was plenty of good mining property in the West where capitalists could better place their capital than in such flimsy concerns as had lately been taking away money which should be spent at home. (Applause.) He had the pleasure of christening the engine "Watson's Engine"—(cheers)—and may the present agent to the company have the pleasure of receiving from the mine a great many dividends. (Cheers.)

The company then proceeded to the account-house, where dinner was provided. Mr. Criper presided, and Major Mathews occupied the vice-chair. The men were also supplied with a substantial repast.

On the removal of the cloth the Chairman gave "Success to the Langford Silver and Copper Mine." They were met that day, he observed, for the very important duty of starting a mine. It was not often they had the opportunity of seeing industry started in a district which gave everyone such strong prospects of great success. (Cheers.) Looking over the reports given by some practical men for the past 20 or 30 years it would be seen that they all gave it as their belief that if Wheal Langford were sunk deeper to the junction there was a certainty of finding a great vein of silver there—(cheers)—and that contact would be gained with some rich copper lodes which would extend over 300 fms. of the Langford sett. (Applause.) Twenty years before the mine suspended operations reports told them that at least 300,000*l.* worth of silver was raised from mines in that locality, and that being the case it was not unreasonable, since the mine was so shallow, to expect that by sinking deeper Wheal Langford, after a little more development, would be one of the most successful mines in England. (Cheers.) And he had very great faith in that expression of opinion, inasmuch as it was but last week that he went and consulted old Captain Knott, who had worked the lodes in the neighbourhood for over 50 years, and he answered him from his personal knowledge of the mine, that at the bottom of the present Langford shaft there was a branch of silver beginning to come in just where the junction is—(applause)—and his certain belief is that the shareholders will find a large deposit of silver there. Now, from that he was more convinced in his opinion that Langford will be one of the richest silver mines we have ever had. (Cheers.)

The toast having been enthusiastically received, Major Mathews proposed "The Healths of the Directors and Shareholders." It gave him great pleasure in attending to-day, especially as his age enabled him to remember the riches which were taken from the ground over which the present engine-house had been raised. It also gave him equal pleasure to know that at the head of the board of directors was a gentleman who had done wonders for the counties of Devon and Cornwall in bringing capital to explore the mineral wealth. (Hear, hear.) The engine they had that day started was a very fine one, made at the well-known Hayle Foundry, and they all knew that anything they made was of first-class quality, and would last almost for ever. (Hear, hear.) It was remarkable in the formation of the present company that there had been no occasion to issue a prospectus, a few gentlemen merely responding to a wish to take the property up. It showed great confidence when parties could thus come forward and themselves take up the working of such an extensive property. (Hear, hear.) There was no doubt they had a good property, and he hoped the wishes of the directors and shareholders would be fully realised, and good steady dividends paid. (Cheers.)

Mr. Criper, in responding, gave "The Health of the Engineer," observing that they could not too highly compliment a gentleman who had so efficiently reared up the great engine, and it was a great relief for the directors to know that they had an engineer who could realise such results as they had seen. (Applause.)

Mr. W. Mathews, in responding, said successful mining depended in a great measure on the efficiency of machinery erected, and there were many times when good properties have been sacrificed through inefficient machinery. So far as he was concerned he tried to do his best not only to get his engines to start, but also to continuing working afterwards. (Applause.) He expressed his regret that of late years a mode of tendering had been in vogue, making the business of a founder decline into a "shoddy" trade; the effect was that a great many "shoddy" engines were being put up which did not tend to the efficient working of mines nor of their prosperity. (Hear, hear.) The engine started that day, although a second-hand one, would, he was convinced, be effective in the draining of the mine, and when that was accomplished he was sure, from his old knowledge of the sett, they would find a property which would pay a good percentage to the adventurers. (Cheers.) Soon after leaving school he could remember hearing that Mr. Williams made a great deal of money on the mine, and had it not afterwards been worked by a company with too small a capital the present company could never have acquired it. (Applause.)

The Chairman said although it was very necessary to have other officials connected with a mine, after all they must look to the agent for the development of the great riches which lie underground. Having known Captain Goldsworthy for 20 years as one of those industrious, scientific, clever, and conscientious miners, he had every confidence in the future of the mine, and asked the company to heartily drink his health. (Cheers.) As a shareholder he appreciated the noble efforts he had made—rising early and retiring late—to start the engine at the appointed time. (Applause.)

The toast having been drunk with musical honours, Captain Goldsworthy responded.

"The Neighbouring Mines" was next given by the Chairman, he observing that there had been a great amount of capital spent in the district, and he believed the few mines which had not been successful yet would, by careful management, be so by-and-bye. (Applause.)

Captain Skewis, in response, expressed his belief that mining enterprise in the district was progressing, and that the profits were, to some extent, increasing, and he believed they had that day laid the foundation for a very profitable mine. (Applause.) Captain Dunstan expressed confidence in the mine, and hoped at the next meeting it would be said, "We are paying costs and giving you a little profit." (Hear, hear.)—Captain Gill said if they only took out from the mine every month as much silver as was in one night taken from an adjoining sett (2000*l.* worth) the mine would do well. (Applause.)—Captain Rickard corroborated the last speaker's statement, and said he hoped the explorations in Langford would be rewarded with the discovery of similar deposits to those found in Wheal Newton. (Hear, hear.) Mr. G. Emmens, of London, related his experience of silver mining near Langford. At Wheal Newton he expected to find deposits of copper, but instead found at the junction a valuable course of silver, and in two months took to surface over 4000*l.* worth. In one night the men broke 2000*l.* worth, and within a year 10,000*l.* worth was raised, and that with very little cost. (Applause.) So there was every encouragement for the shareholders in Langford. (Applause.)

Captain Skewis gave in high terms "The Health of the Proprietor of the Tavistock Iron Foundry," who had done so much for mining, and Mr. J. Mathews responded.

"The Builders" having been given by Captain Goldsworthy, Major Mathews gave "The Health of the Chairman." It was through Mr. Criper that the property had been brought to what it was, and he hoped he would live many years to enjoy the profits of it. (Applause.) Mr. Criper had been a merchant, and he reminded the company how much merchants and tradesmen in the immediate neighbourhood of mines had done to ensure their success. Mr. Criper was one of those, and for the good he done mining deserved the thanks of everyone who had anything to do with the industry. (Cheers.)

Mr. Criper responded in the course of a speech sparkling with wit and humour, and the toasts of the secretary, men, and the press closed the proceedings.

INSTITUTION OF MECHANICAL ENGINEERS.

The summer meeting of members, which will commence at Leeds on Tuesday next, promises to prove quite as attractive and instructive as any of its predecessors. The papers which have been offered for reading and discussion include those—on the History of Engineering in Leeds, by Mr. A. H. Meysey-Thompson, of Leeds; on the Working of Blast-furnaces of large size at High Temperatures, with special reference to the Position of the Tuyeres, by Mr. Chas. Cochrane, of Stourbridge, Vice-president; on Mining Machinery, by Mr. Henry Davey, of Leeds; on a Single-lever Testing Machine, by Mr. J. Hartley Wicksteed, of Leeds; on Governing Engines by regulating the Expansion, by Mr. Wilson Hartnell, of Leeds; and on the Fromentin Automatic Boiler Feeder, by Mr. John Hayes, of London. It has been arranged that the members shall reach Leeds, and register their addresses at the Town Hall on Monday evening, and on Tuesday morning the official reception by the Mayor (Mr. George Tatham) will be held in the Civil Court immediately after which the President—Mr. Percy G. B. Westmacott—will deliver his inaugural address, the reading and discussion of the several papers being then proceeded with.

On the afternoons of Tuesday and Wednesday members only (except by special permission of the Local Committee) will visit the more important works and factories in Leeds and the neighbourhood, amongst which may be mentioned those of the Monk Bridge Iron Company, Whitehall-road; Kirkstall Forge Company, Kirkstall; S. T. Cooper and Company, Leeds Ironworks, Hunslet; Taylor Brothers and Co., Clarence Ironworks; John Fowler and Co., Steam Plough and Locomotive Works, Hunslet; Fairbairn, Kennedy, and Naylor, Wellington Foundry (Wednesday only); Kitson and Co., Airedale Foundry, Hunslet-road; Joseph Whitham and Son, Perseverance Ironworks, Kirkstall-road; Samuel Lawson and Sons, Hope Foundry, Mabgate; Joshua Buckton and Company, Well House Foundry; Greenwood and Batley, Albion Works; Hathorn Davey and Company, Sun Foundry, Dewsbury-road; W. Ingham and Sons, Firebrick Works, Infirmary-street; Tannett, Walker, and Company, Goodman-street Works, Hunslet; Smith, Beacock, and Tannett, Victoria Foundry, Water-lane; Manning, Wardle, and Company, Boyne Engine Works, Hunslet; Hunslet Engine Company, Jack-lane, Hunslet; T. R. Harding and Son, Tower Works, Globe-road, Holbeck; Pollock and Pollock, Longclose Works, Newtown; Scriven and Holdsworth, Leeds Old Foundry, Marsh-lane; Farnley Iron Company, Farnley; and Maclea and March, Union Foundry, Dewsbury-road. There will be a luncheon each day at the Victoria Hall, by invitation of the Local Committee; on Wednesday there will be a *conversazione* in the Philosophical Hall; on Thursday there will be a special free excursion, through the courtesy of the Midland Railway, to Bradford, and the annual dinner of the institution will be held in the evening; and on Friday an excursion will be made to Hull, by special train, provided free by the kindness of the North-Eastern Railway Company. At Hull visits will be paid to the works of the Hull and Barnsley Railway and Dock Company, by kind invitation of Messrs. Lucas and Aird; also to those of Earle's Shipbuilding and Engineering Company, the Hull Hydraulic Power Company, &c. The members will be entertained at luncheon by Messrs. Lucas and Aird. The return will be made to Leeds by special train, also provided by the North-Eastern Railway Company. Arrangements will be made for enabling members to leave the return train at the various junctions, so as to take ordinary trains going north and south. Hence it may be anticipated that a very enjoyable week will be passed.

Cornish Pumping-Engines.—The number of pumping-engines reported for June is 14. They have consumed 1970 tons of coal, and lifted 12·5 million tons of water 10 fms. high. The average duty of the whole is, therefore, 49,700,000 lbs. lifted 1 ft. high by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Dolcoath—85 in.	Millions	54·8
Mellanear—76 in.		55·2
Mellanear—Gundry's 80 in.		50·4
West Basset—Thomas's 80 in.		52·1
West Tolgus—Richard's 70 in.		49·8
West Wheal Seton—Harvey's 85 in.		62·2
West Wheal Seton—Rule's 70 in.		60·1

THE MINING LAWS OF THE UNITED STATES.

So many British capitalists are now interested in mining enterprise in the United States that a knowledge of the mining laws of the Union and of the individual States is more than ever necessary in this country; there are many, however, to whom a law book is most unattractive, and who would almost prefer to let their property take its chance than trouble themselves with such a matter, although occasionally they would gladly avail themselves of a book which would enable them to ascertain some particular legal fact which for the moment affects them. A volume which will readily give them such information has just been completed by Mr. Charles S. Gleed,* in the form of an abundantly illustrated guide-book, which he has prepared with a view to give a good general idea of the vast territory which is tributary to the new line of railway communication between the Missouri River and the Pacific Ocean; to give, in fact, all which the general reader cares to know or can ever remember. On this subject, as Mr Gleed remarks, no single publication could be a real authority as to details. The greater portion of the country is so new, and its development is so rapid, that none but the more general geographical specifications would for any considerable time hold good; but wherever practicable details have been given, and in all cases with the greatest possible accuracy. Commencing with the southern route Mr. Gleed gives very interesting accounts of the districts passed through by Atchison, Topeka, and Santa Fé Railroad; the Denver and Rio Grande Railroad; the Atlantic and Pacific Railroad; the Southern Pacific Railroad; and the California roads. He has then an interesting chapter on the geography, climate, and development of Kansas; followed by accounts of the cities and towns, of the agriculture, and of the beautiful Arkansas valley.

The chapter on the geography and topography of Colorado contains complete catalogues of its trees, plants, and minerals; and this is followed by a chapter on the cities and districts of Colorado—Pueblo, Denver, Silver Cliff and Rosita, Durango and Silverton, Dolores and Rico, and the Great Gunnison—in several of which many readers of the Journal are largely interested. Colorado resorts also form an interesting chapter. The history and resources of New Mexico and the account of its cities and districts are well worth reading, and in treating of Arizona considerable prominence is given to its mines. But, although less attractive reading than the other portions of the volume, perhaps the most valuable is that dealing with the mining laws. The mining laws of the United States are, of course, supreme in all the States and Territories, and any laws made by other corporate bodies must keep within these boundaries. A State or Territory can make its own laws, but not to conflict with a national law. All valuable mineral deposits on lands belonging to the United States are free and open to exploration and purchase, and the lands in which they are found to occupation and purchase by citizens of the United States, and those who have declared their intention to become such under regulations prescribed by law, and according to the local customs or rules of miners, so far as they are applicable and not inconsistent with the laws of the United States. The volume gives the United States Mining Laws *in extenso*—that is title XXXII., cap. 6 of the Revised Code; the repeal provision, title LXXIV.; the regulations framed under the United States Laws; the Mining Laws of Colorado, the supplementary Act, the Act of 1877, and the law exempting from taxation for 10 years from date of the Act the mines and mining claims bearing gold, silver, and other precious metals, except the net proceeds and surface improvements thereof; the mining laws of Arizona; and the mining laws of New Mexico. The Stock Laws of Colorado are also given. The work is one which will be of great utility to all connected with mining enterprise in the Western States, and will at the same time prove very interesting reading.

STEAM WHEELS.—A new kind of steam-engine has been recently patented in Austria by Prof. Wellner, of Brünn. The so-called steam-wheel (according to the account in the Polytechnischer Journal) consists of a simple water-wheel, mostly immersed in hot water in a closed vessel. Steam is admitted at the lower part, and forces the cells of the wheel upward, producing rotation. The steam fills more and more of the cells on the rising side, and at length begins to escape into the steam space above the water. Steam may either be produced directly at the lower part or conducted to the vessel from elsewhere. The upper tube for outlet of steam may lead either into the open air or into a condenser. The mechanical work consists in the ascent of the specifically lighter steam in the heavier liquid. These steam-wheels may either be used as independent motors or in connection with ordinary steam-engines; in the latter case the escape steam of one kind of machine is utilised for the other.

* "From River to Sea; A Tourists' and Miners' Guide from the Missouri River to the Pacific Ocean, *viz* Kansas, Colorado, New Mexico, Arizona, and California." Edited by CHARLES S. GLEED. Chicago: Rand, McNally and Co. London: Trübner and Co., Ludgate Hill.

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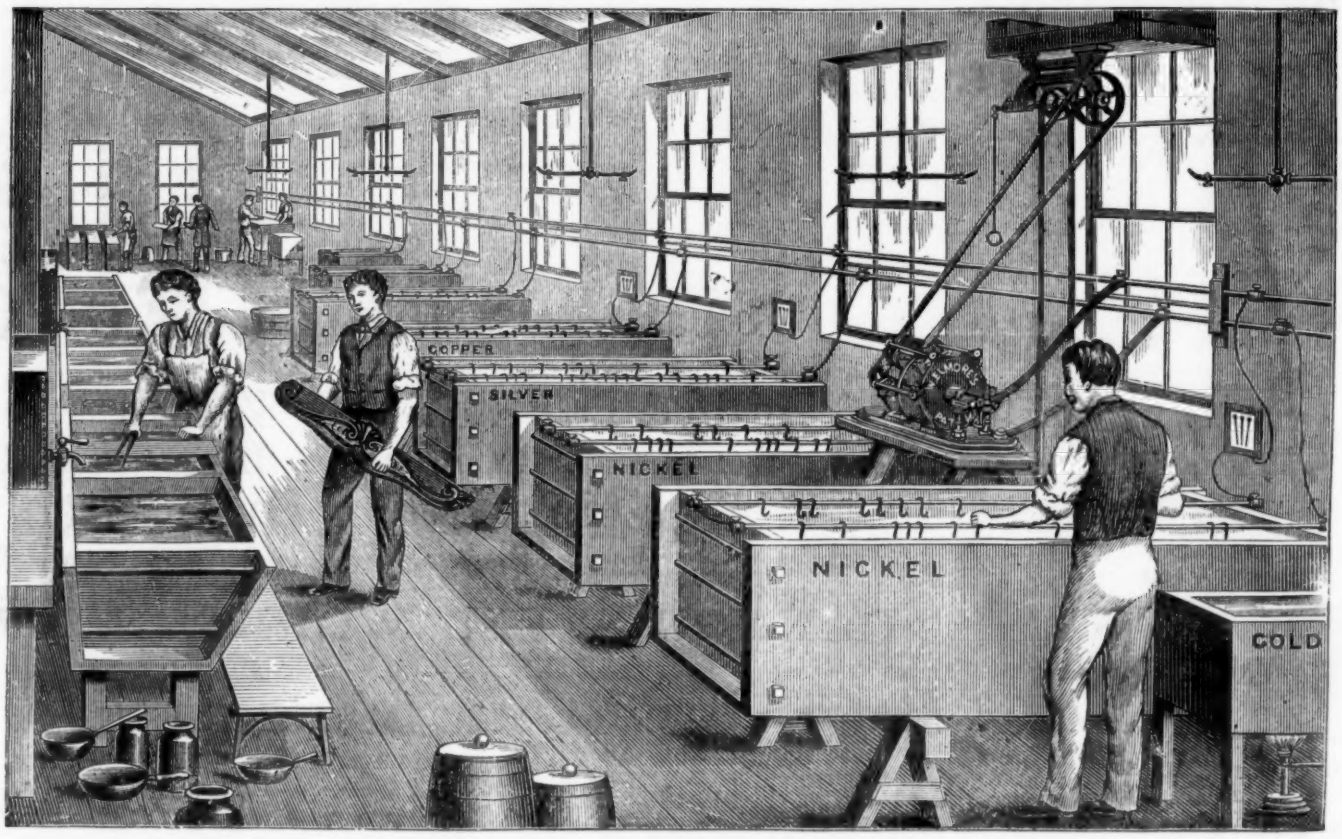

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